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# THE MALAYAN ECONOMIC REVIEW

(*THE JOURNAL OF THE MALAYAN ECONOMIC SOCIETY*)

VOLUME IV, No. 1 APRIL 1959

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# THE ROLE OF THE CIVIL SERVICE IN THE ECONOMY OF INDEPENDENT MALAYA

By Lim Tay Boh

[*Presidential address delivered at the Third Annual General Meeting of the Malayan Economic Society on September 26, 1958*]

## 1. BASIC CHARACTERISTICS OF THE MALAYAN SOCIAL REVOLUTION

We are passing through a social revolution the basic characteristics of which can be described in terms of its two significant aspects, one of which is political and the other is economic.

Politically it involves the transfer of political power from external to internal control. This transfer has established the predominance of the industrial working class and the smallholding farmers in the electorate. The result has been a significant change in the relationship between different social classes. In particular it has increased the influence of the non-English speaking working class in the towns and farmers in the rural areas in relation to the English speaking and educated middle class.

The transfer of political power has been accomplished in a smooth orderly manner and will soon be taken a stage further when Singapore becomes a self-governing State under its new constitution.

The political revolution is only half of the social revolution. The other half is an economic revolution which may be described as a process in which the economy is undergoing rapid changes.

The experience of other countries in Southeast Asia shows that the political revolution will have to be completed by an economic revolution. The reason for this is well known. The driving force in the revolution is not only the aspiration of the people for independence and freedom to manage their own national affairs, but also their intense desire for freedom from want and poverty. The transfer of political control into the hands of nationals in the Federation and Singapore is, therefore, only a first step in the task of raising the living levels of the masses. The next and even more urgent step is the planning and implementation of a programme of accelerated economic and social development. The urgency of this task is easily appreciated in the light of our explosive population problem.

The major objective of economic policy in both the Federation and Singapore must be to achieve a rate of economic development which keeps pace with the rapid growth of population. This is a task of enormous difficulty because owing to the expectations of the masses for quick results it has to be accomplished within a space of time very much shorter than similar revolutions in Western industrial countries.

## II. ROLE OF THE CIVIL SERVICE

Nevertheless, the Governments of Malaya have no alternative but to press ahead with their task of promoting rapid development. In this task the civil service has a crucial role to play.

By the civil service I mean all levels of the government service from the top echelon — the Malayan Civil Service and the Singapore Administrative Service — to the lower grades in the executive service. This service has been built up under the colonial administration as an offshoot of the British Civil Service and has several important assets, namely:-

(a) It has, on the whole, achieved a high standard of efficiency and has been successful in maintaining law and order in Malaya and in ensuring the necessary political stability to enable steady progress in certain sectors of the economy.

(b) It has carried out its function of administration relatively free from corruption and its higher grade officials have been men with a reputation for integrity.

(c) It has built up a sound system of administrative procedure based on observance of regulations. The practical aspects of administration are handled within a framework of established rules and procedures and not on a purely personal basis, although responsible officials have discretion to make decisions within this framework.

(d) Finally, it has a good system of financial administration and budgetary control, which aims at administering public funds in accordance with items of expenditure approved by prior budgetary estimates and which attaches importance to strict accounting and auditing.

As against these assets there are several major weaknesses:-

(a) Its approach to economic problems is based on the view that its function is primarily to maintain law and order and to preserve the existing legal and institutional framework to ensure the necessary stability for the smooth working of the economic system.

(b) Under the colonial administration the civil service in Malaya inherited the nineteenth century tradition of *laissez-faire* in economic matters. The scope of its function has however steadily widened, especially since the turn of the century, and education, health and social welfare services have become more important.

By and large, however, the spirit that pervaded the colonial civil service was one of *laissez-faire* in economic matters, and government activities in the economic field were reduced to the minimum of preventing abuses and the grosser form of economic exploitation. The regulatory function of the civil service in the economic field was, in fact, parallel to its regulatory function in civil administration.

## III. THE CIVIL SERVICE AND THE ACHIEVEMENT OF A NATIONAL ECONOMY

There is need to overcome these weaknesses so that the service could be adequate to fulfil its role of helping to complete the social revolution. What is required in fact is that it should transform itself into an agent for speeding up the process of economic development. The nature of this transformation can be seen in the light of what I consider to be its two basic functions in economic development. The first is the formulation of economic policy and development

programmes; the second is the execution of these programmes. I shall deal with the first function here; the second function I shall discuss in a later section.

(a) Formulation of Economic Policy

The civil servant at the Permanent Secretary level has a very important role to play in assisting the politician-minister in formulating economic policy and planning development programmes. The decision between alternative objectives of policy must of course be made by the minister, so must the choice of alternative development programmes. But the civil servant's role is to give the data and advice based on research in the field as well as on analysis. It is nowadays impossible for the minister to make decisions on policy without trained and skilled professional advice. The reason for this is ably stated by Maurice Zinkin: "In the modern, complicated world no Government could work for very long on purely political decisions without the decisions becoming with time so inconsistent, so inadequately based on fact, that the Government would cease to function because its citizens would no longer know exactly what was expected of them."[1]

(b) Planning Development Programmes

The civil servant must also provide data and expert advice to assist the minister in planning programmes of economic development. The need for economic planning for less developed countries is now generally accepted. There are two aspects of such economic planning:-

(i) In the private enterprise sector, economic planning involves the use of constantly improving methods of statistics, accounting, and economic analysis in every business operation. Planning in this sense aims at applying the results of economic analysis in the rationalisation of industry. It emphasises coordination of detailed plans and working programmes with general business or economic policies adopted for the individual company or the industry.

(ii) In the public sector, economic planning involves assistance and some guidance by the government to private industry in its efforts of coodination, and particularly coordination of its monetary, fiscal, labour and social policies in developing a consistent national programme for sustained and balanced economic growth.

Government planning in this sense does not mean centralised control or elimination of private enterprise, but government action to give direction to the uncoordinated trends and policies which are impinging on the economy. Such government action is expected to promote greater stability, fuller use of all resources and equitable distribution of the national product.[2]

The case for such planning is implicit in the positive functions which modern governments have in economic affairs.

In assisting the politician to plan economic development programmes, the civil servant should appreciate clearly his precise role, which has been stated as follows:-

> "It is for the electorate to decide in what direction it wishes the country to go; it is for the politician to give words to these desires and turn them into a policy; it is for the bureaucrat to give the policy form."[3]

1. Maurice Zinkin, *Development for Free Asia*, New Jersey, 1956, pp. 76-78.
2. Edwin G. Nourse, *Economics in the Public Service*, London, 1953, pp. 42-43.
3. Maurice Zinkin, *op. cit.*, p. 78.

The civil servant's function is, therefore, not to run counter to the politician over major policy, because the politician is responsible to the electorate, and the electorate and their instrument, the politician, are entitled to have their way even if they are wrong. The civil servant may point out the risks which are involved in certain policy decisions. His function is not to decide policy, but to assist the politician-minister in formulating policy in the light of the available facts and principles based on research. Once a decision is made, it is the duty of the civil servant to carry it out.

But this function of assisting the politician in formulating a workable policy is a very important one, especially in Malaya where politicians have very little experience and scientific training and where they are likely to be carried away by party or personal interests. For this reason the civil service in Malaya must be able to provide the politician with the expert advice of professional economists. There are many aspects of administration which are economic in nature, and no sound decisions of policy can be taken without reference to the data provided by statistical and economic research. There is need, therefore, for the permanent staff of the civil service to include not only men with training in economics, but also teams of specialist economists to direct research and analyse the effects and implications of policy decisions.

## IV. FUNCTION OF ECONOMIC ADVISERS

The function of economic advisers, like that of civil servants, is not to determine policy. Decisions of policies can best be made by the executive or the political head of a ministry. In this respect the relation between the economist and the executive can be described as that between the economic scientist and what has been termed the "economic engineer." The economic scientist analyses the relation between causes and effects, between human motives and responses. The economic engineer keeps in touch with the findings of the economic scientists, and uses them "in the active process of operating our economic mechanisms or building new ones." He "employs the concepts, measurements, and tools supplied by economic scientists. With these aids he seeks to develop a better technology in the use of the economic machine. This technology is embodied in our economic policies and practices, public and private."[4]

As adviser to the government executive, the role of the economist is that of a technical adviser, who analyses and indicates what should be done to achieve a given policy objective or the risks attending certain lines of policy. Now a practical policy means a workable policy, and the competent policy-maker must not only give technical advice, but also take into account the human factors in the situation. A "practical economic policy must reflect a nice sense of balance between stability and progress. It must adjust itself to the rate at which a society or group can assimilate social change."[5]

Our politicians need reliable data and sound advice based on systematic economic analysis to enable them to make the right decisions on economic policy. The use of such knowledge is essential in Malaya, lest our politicians, in relying on purely political considerations and party interests, prescribe remedies which throw the whole economic machine out of gear.

4. Edwin G. Nourse, *op. cit.*, pp. 16-17.
5. Ibid., p. 18.

## V. ECONOMIC THEORY AND PRACTICAL POLICY

It is necessary to elaborate further the importance of formulating policy in the light of the contributions of economic analysis. The question is often asked by politicians and businessmen whether economic theory can make any valuable practical contributions on major issues of economic policy. There is a tendency in recent years among Asian nationalists to assert that "Western" economic theory is irrelevant for Asian countries because conditions in these countries are totally different from those in advanced countries. This assertion may be interpreted in two ways: (1) that the generalisations and conclusions of economic theory have no practical relevance to the economic problems of the real world, and (2) that conditions in underdeveloped countries are radically different from those in Western countries so that economic theory as developed in the West canont throw any light on the problems of underdeveloped countries.

We are familiar with the first version of this criticism which is popular particularly among those who take pride in being practical men of affairs and who therefore scoff at the speculations of theory. Their attitude reveals a serious misunderstanding of the scope and methodology of economic theory.

Economic theory provides a frame of systematic and logical thinking on economic questions. Theory is indispensable in organising, analysing and interpreting the facts of empirical research. It helps us to determine the relevant and significant questions to be asked and to study the facts in terms of causal relationship. Without the aid of a logical theory, it will be impossible to make sense of the mass of isolated facts.[6] The nature and scope of economic theory has been clearly stated by J. M. Keynes in a passage familiar to all students of economics:-

> "The Theory of Economics does not furnish a body of settled conclusions immediately applicable to a policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions."

Economic theory starts from simplified assumptions and analyses the basic relationships in such simplified conditions. The broad basic relationships are applicable to all economies, although the more precise and specific relations are applicable only to particular situations. They are of course not applicable to extremely complex situations. Moreover, the relationships are explained in terms of static situations. The conclusions cannot therefore be applicable to the dynamic situations in the real world without modificatons which take into consideration the complex character of such situations.

Secondly, the attack on economic theory is based on differences in economic conditions in underdeveloped countries. The basis of this criticism is that economic conditions in underdeveloped economies are different from those in developed countries and that therefore the hypothesis of economic theory as developed in the West are not relevant to the situations in underdeveloped countries.

There is no doubt that many of the hypotheses upon which the propositions of Western economic theory are based are not strictly applicable to the conditions of underdeveloped economies. This does not mean, however, that the methods of economic analysis are useless, but rather that we should reconsider the hypotheses in the light of the special conditions of underdeveloped countries. Moreover,

6. Cf. G. Myrdal, *Economic Theory and Under-Developed Regions*, London, 1957, pp. 160 ff.

the motives for economic activities in underdeveloped countries are basically similar to those in developed countries. The broad basic propositions of Western economic theory are equally relevant to conditions in underdeveloped countries. It would not be difficult to cite examples of the relevance of the basic economic propositions to the study of underdeveloped economies in spite of the differences in the institutional background.[7] What is needed is not the abandonment of theoretical analysis but the further development of the tools of analysis, so that they can be useful in studying the special conditions of underdeveloped countries.

I have no doubt that economic research in Malaya as an aid to the formulation of economic policy will have to be directed to two main areas of study:-

(a) Empirical research, i.e., systematic study of the facts about our economy in order to determine its basic characteristics and its relationships with other economies in Southeast Asia.[8]

(b) Theoretical research, i.e. an investigation of the tools of analysis which are needed in the study and interpretation of the facts about our economy.[9]

The latter will involve the following considerations:-

(i) Which of the existing analytical tools inherited from the West are relevant and useful?

(ii) What modifications have to be introduced to the rest of our existing tools in order to make them effective in handling situations typical of the Malayan economy?

(iii) What new tools should be developed which take into account the special situations of the Malayan economy?

## VI. THE CIVIL SERVICE AND EXECUTION OF POLICY

A development programme, however well planned, depends for its success on its implementation. It is the actual achievement of the targets and objectives of the programme that yields results and not the soundness and excellence of the plan alone. To administer and carry out such a well-planned programme, the administrative personnel must have the qualities of character and the technical competence for the task.

For this reason the civil service should be manned by persons who are (a) of high intellectual calibre, (b) noted for their honesty and integrity, (c) competent in administration and organisation and (d) endowed with qualities essential to the successful handling of a development programme. These qualities are: ability to grasp the basic principles of the programme and to understand the relation between its different sections; good leadership and sound judgement in selection

7. Cf. P. T. Bauer and B. S. Yamey, *The Economics of Under-developed Countries,* London, 1957, p. 8.

Also P. T. Bauer, *Economic Analysis and Policy in Under-developed Countries,* London, 1957, pp. 14 ff.

8. Cf. Wesley C. Mitchell, "Empirical Research and the Development of Economic Science", in *Economic Research and the Development of Economic Science and Public Policy.* (Twenty-Fifth Anniversary Papers of the National Bureau of Economic Research), New York, 1946.

9. Cf. J. J. Spengler, "From Theory to Public Policy", in *Economics and Public Policy* (Brookings Lectures, 1954), Washington, D.C., 1955.

W. A. Johr and W. H. Singer, *The Role of the Economist as Official Adviser,* London 1955, Introduction.

suitable men to assist in carrying out different projects in the programme; a gift of inspiring confidence in colleagues and subordinates and of securing their cooperation; drive and initiative and willingness to do field work.'

Not much need be said about the first three requirements listed under (a), (b) and (c), for the Malayan Civil Service and the Singapore Administrative Service pride themselves on following a tradition which attaches first importance to these very qualities in their personnel. Experience with the civil service in some underdeveloped countries has shown clearly how development can be seriously delayed through a corrupt and incompetent administration.

Competence in administration implies not only mastery of rules and techniques, but also speed in decision and execution when needed. Two common causes of delay in execution are red tape and the habit of passing on the buck. Such delay is fatal to development because it means frustration and exasperation to businessmen and entrepreneurs.

A huge organisation like the Government "must work in a hierarchy, with authority decentralised according to well-defined rules".[10] This does not mean that the civil servant should be so tied down by rules that he has no discretion. It does mean that the discretion must be exercised so consistently that the public know what to expect.

Important as are these qualities, they are not sufficient for the purpose of administering economic controls and development. They need to be supplemented by the other qualities listed under (d). Good leadership is an important requisite, for without it the senior civil servant would not be able to inspire cooperation and confidence from his colleagues and his subordinates. A good leader must have sound judgement of character and must be able to pick out the right persons to assist him in carrying out the project under his charge.

Good leadership in the lower ranks is also important because the implementation of a development programme involves carrying out a set of projects calling for the cooperation of civil servants and members of the public.

Coordination of different sections of the programme is an essential factor in successful development. Another essential of successful development is the need for the civil service to get things done speedily. This means that the civil service must be staffed by men with drive and initiative.

In conditions of serious shortage of experienced personnel such as prevails in Malaya today, the senior members of the civil service will often have to work long hours to clear their heavy load of work without prolonged delay. This they must be willing to do in the interest of maintaining the efficiency of their service.

One of the most important essentials is that the civil service in Malaya must have in its ranks personnel adequately trained to carry out work in the field. The importance of this aspect cannot be over-emphasised. Rural development projects generally require the civil servants to go out into the field so that they have to come into contact with the peasant farmers at the village level. In the development of industries also, the civil service officers have to come into contact with industrial entrepreneurs and workers in the factories.

The civil servants in implementing development programmes must, therefore, know how to deal with the ordinary people. The administration of Malaya and other underdeveloped countries, and particularly the economic development part of the administration, cannot be conducted on paper or at a desk. "It must be

10. Maurice Zinkin, *op. cit.*, p. 84.

carried on in the field, by talking to people; and talking over a very wide range of subjects, from contributions for a new school for the village, to the use of a fertilizer of which the villagers have not previously heard, or the need to build a road to the local market."[11]

## VII. THE CIVIL SERVICE AND THE PEOPLE

In the past the civil service in Malaya, like all other colonial civil services, was regarded as a career bringing prestige and honour to the family of the locally born appointee. He enjoys special advantages in respect of status and terms of service. He has the authority which brings him respect in the eyes of the public. But he tends to be isolated from the people. He is regarded as the embodiment of governmental authority. His purely administrative outlook reflects his traditional role of being the preserver of the machinery of government and of government procedure. This tends to keep him apart from the people, so that he is generally out of touch with popular aspirations and current thinking.

This is a serious matter, since it tends to foster the popular conception of the civil servant as a representative of an alien Government. So long as this attitude persists, the civil servant finds it difficult to inspire trust and cooperation from the people, for whose welfare he is working.

Moreover, there is a danger that his lack of contact with the masses may prevent him from having a sympathetic understanding of their way of life. Consequently, in his dealing with the uneducated members of the public he may become brusque and impatient. This further increases the hostility of the public towards the service.

An essential condition for successful development is the establishment of good relations with the ordinary people, so that they will accept the civil servant as an officer who is trying to help them, and not as the representative of an alien authority who is interfering with their affairs. To achieve this result the civil servant must handle the people with tact and courtesy, though with firmness. He must show a genuine personal interest in their problems and their welfare.

## VIII. MEASURES FOR STRENGTHENING THE CIVIL SERVICE IN MALAYA

What then should be done to achieve a service of high standard so that it can become an effective agent of economic development? The following measures seem to me to be necessary:-

(a) A good system of recruitment aiming at selecting officers of high intellectual calibre and possessing qualities of character which I have indicated above as being essential in connection with the administration of economic development programmes.

(b) Establishment of a research and advisory service to promote systematic statistical and economic research and analysis and to provide scientific data as aids in the formulation of economic policy and in the planning of development programmes.

(c) For this purpose the civil service should not only include on its staff officers trained in the techniques of economic and statistical research and analysis, but also make use of the services of high grade professional economists through an organised advisory unit.

11. Maurice Zinkin, *op. cit.*, p. 89.

(d) In the field of economic research, the aim should be not only to obtain statistical data and other information about the economy which can be presented in statistical form, but also to test and apply the relevant findings of economic analysis in the formulation of economic policy. In this field there is need for a closer link between the civil service and the University of Malaya so that the resources of both the Government and the University can be pooled for stimulating the use of economics in the public service.

I have myself often argued in favour of the establishment of economic research units in which the research personnel of the civil service can cooperate jointly with the Economics Department of the University in carrying out research on problems of practical economic policy.

(e) There should be a closer link between the civil service and the Univer- University through the organisation of a University extension service which provides facilities for civil servants in the field of economic development administration to participate in seminars and conferences specially arranged by the University to promote exchange of ideas on specific aspects of rural and industrial development.

(f) When the proposed Department of Public Administration in the University is established, I hope that one of its functions would be to provide training programmes as a University extension service for serving officers in the civil service to enable them to obtain further training in the techniques of economic administration.

## IX. CONCLUSION

The above are some practical measures which are necessary to strengthen the civil service in Malaya, but the basic condition of its adequacy in fulfilling its role in economic development is a change of attitude towards problems of social and economic development and its impact on the living conditions of the people. In the conditions of independent Malaya, it is essential that the civil servant should be imbued with a sense of mission and a passionate interest in the welfare of the masses of the people.

# TYPES OF TENURE AND ECONOMIC DEVELOPMENT*

By Erich H. Jacoby
Land Tenure Specialist
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## INTRODUCTION

The adaptation of a farm economy to the variations of growing conditions demands a considerable measure of flexibility. This is almost a truism and will hardly be contested. But the fact that under growing conditions flexibility is equally needed with respect to adjustments of the agrarian structure is not accepted with the same readiness, though it is no less true. I feel that it has not always been to the advantage of agricultural and economic progress that problems of agrarian structure have been approached with well-formulated preferences for solutions which fit in a certain system of thought and not from the only decisive point of view, namely, *which solution would under existing conditions secure to the man on the land an adequate standard of living from an economically-sized farm and assure him, at the same time, of a dignified place in his community and in society as a whole?*

The perfect tenure system which infallibly guarantees promotion of agricultural efficiency and social wellbeing has never existed. At one time or another all systems have been adequate or inadequate under certain conditions and in

* This article represents a lecture originally presented under the heading "Sociological and Legal Aspects of Types of Holdings in Areas Subject to Economic Development" to the International Agricutural Centre Wageningen, Netherlands, August 1958. Under the present heading the lecture was delivered at the Centre on Principles and Policies of Land Settlement for Asia and the Far East, Gal Oya, Ceylon, November 14 — December 5, 1958.

certain stages of economic development, and good and bad farming or progressive and regressive agriculture have been encountered under almost every conceivable form of land tenure. The final effect of a tenure system on agricultural development can only be determined by the extent to which it releases and increases the productive energies of the people. But here also some caution is necessary. Land problems exist which cannot be solved in terms of land policy alone, a fact which illustrates the interdependence between agricultural and general economic developments.

The process of economic growth has numerous variations depending on the kinds and amount of resources, the distribution of population, the rate of progress, the emphasis placed on agricultural or industrial development. and the balance established amongst the various sectors of the economic life during the course of development. The position of agriculture will differ accordingly, and with it the position of the man on the land. Within the framework of this lecture, it is not possible to deal with the whole complexity of agricultural development patterns and their impact on various types of holdings. The arid areas, however, have a very special place in agricultural development: these areas comprise around 6,400 million acres, or about one-quarter of the world's land surface. They include the great hot deserts of the world, as well as the marginal areas adjacent to desert land, such as parts of Canada, the United States, the Argentine, Australia, the Middle East and North Africa.

The discussion of arid areas is an essential aspect of this lecture, because they embrace very distinct economic systems and human factors of extremely different social and cultural backgrounds.

In the New World, European settlers have, during a few generations, built an agricultural system of considerable technical efficiency with the support of a highly-geared industrial economy. Constant increase in productivity per man is achieved through the use of machines, the application of science, and the adoption of good farm-management practices. Better knowledge, superior organization, adequate credit and marketing facilities and, last but not least, modern commodity exchange and insurance methods, have reduced the risk of farming and made it subject to calculation and planning. Within such a system of agriculture, characterized mainly by extensive grazing and grain production, farm ownership is widely distributed and farms are large.

In the Old World we see a very different picture: communities, still ruled by time-honoured customs, struggle, without any economic backing, against the obstacles of climate and lack of water, and the risks of farming and grazing. The pressure of the people on the scarce available resources is stronger than in the New World, and in some countries large parts of the arable land are owned by landlords who exact rents. Nomadic tribes depending upon grazing of livestock for their livelihood find their territorial grazing rights invaded and more and more curtailed. The level of farming has remained extremely primitive for centuries. Peasants and herdsmen have not had the support of modern techniques, scientific knowledge, credit, and of the many other organizational benefits available to the people in the arid areas of the New World. They have stood alone and met the vagaries and risks of climatic conditions by tribal and communal institutions, depending to a very great extent upon mutual aid, customs, and an authoritarian social structure.

In the arid regions of the Old World, therefore, development can hardly be conceived without due consideration being given to tenure conditions. In planning land use, then, we must pay serious attention to the man-land relation — in the broadest sense of the term — and, wherever necessary, we must reconcile and coordinate the impact of the advancing agricultural economy with the more traditional economy of the indigenous commmunity. Farm operations in arid regions must be adapted not only to variations in growing conditions, but also

to the tenure conditions ruling in the area and to possible tenure improvements to be introduced.

Leaving the arid zones, and reverting to the more general aspects of the types of land holdings, it is safe to state that any generalization is dangerous and may easily become a misleading over-simplification. The interaction of physical, economic, social and cultural factors determines the type of holdings. The process of economic growth, however, continously changes the balance of the factors involved and the emphasis on the interaction of the various factors.

## I. PATTERNS OF AGRICULTURAL DEVELOPMENT

### SHIFTING CULTIVATION

The fundamental distinction between primitive and advanced agriculture has to be made in terms of land use. Primitive cultivators raise one or two crops on a given plot of land, then abandon the plot and make a new field, preferably in the forest, so that the old plot fallows sometimes for many years, and may itself revert to forest. In short, primary cultivators shift the places of their agricultural activities with regularity. This has rightly been called "shifting field". In contrast to shifting field cultivation, advanced agriculture is practised year after year on the same well-tended plot, and its productivity is sustained by highly-developed agricultural techniques such as manuring, terracing, crop rotation, etc. Settled agriculture requires a more complete understanding between the relationships of soils, water uses, tilling and yields than does shifting cultivation.

It is hard, and sometimes even impossible, to apply to term "agricultural holding" in connection with shifting cultivation that employs small settlement patches of land throughout the forests which, afer a few years, revert to jungle. Nevertheless, the tribal community which makes its living off these settlement strips of land is in need of legal protection of their right to use the forest land in the manner they have always done, if they are no longer allowed to defend their livelihood by armed combat. The recognition of their rights or the refusal of their claims, has direct or indirect effects on the people, on the land concerned, and even on the region as a whole.

### INTRODUCTION OF CASH AND PERENNIAL CROPS

When settled subsistence agriculturists take to the growing of cash or permanent crops, their attitude to the land changes — they gradually become opposed to the idea of tribal reallocation of land, and wish to identify themselves with the land they till. At this stage the process of individualization of rights in land begins, and land which formerly was communal property, or at least under tribal control, gradually slips into the private sphere. It is the process of individualization which matters in this context, and not the end to which it may lead. There remains the broad frame for institutional adjustments dependent on population pressure, capital intensity, law concepts, etc., and here is the actual chance for social and legal engineering to establish that type of holding which fits into the economic, social and cultural environment.

Institutional adjustments, however, have to be accelerated, when, due to the growing density of population and the increased pressure on the land, the holdings acquire a transferable value and rights in the land become commercialized.

### PLANTATION ECONOMY

At more advanced stages of agricultural development, tenure conditions are highly sensitive to the character of the crop. In faraway areas of the East, particularly in Indonesia, Ceylon, the Fiji Islands, and also in the West Indies, the need for a regular supply of plantation crops (particularly tea and sugarcane)

and technical developments have led to the concentration of individually owned plantations into large company-owned estates, which provide the possibility for large-scale operations. But in the case of other plantation crops, where capital expenditure on a large scale is not so necessary as for tea and sugarcane, medium-sized and smaller holdings are able to work economically, provided that satisfactory arrangements for the processing of the crop exist. Cacao and coconut crops are produced in the West Indies and on the West Coast of Africa on individual holdings since their processing, compared with other plantation crops, does not require a large capital outlay. In fact it is possible to meet the cost for planting and tending until the production period arrives generally by mortgage, when personal funds are not adequate. For this reason it has been possible to build up in Ghana, on the basis of peasant ownership, the world's most prosperous cacao-growing industry. It is very probable that the cooperative features of the industry have to be considerably strengthened.

It would, however, be wrong to overstate the impact of the crop on the tenure system, since contrary trends can also be observed: the manner of land distribution may determine the course of agricultural development, as is the case in Kenya and Tanganyika; the existence of rigid inheritance rules may subdivide and fragmentize agricultural holdings to an extent which makes it impossible to plant economic crops. It has been said with great authority that "obsolete methods of holding land may entail obsolete methods of cultivation".[1]

### MODERN FARM ECONOMY

The introduction of modern farm economy involving the use of machines, the application of science, and the adoption of good farm management practices, has a decisive impact on the size aspect of the holdings. Economic results are no longer viewed on the basis of tradition and modest satisfaction, but in the striking light of input-output relationship and on a comparative basis with alternative investment possibilities both in agriculture and industry. *The undersized holding has always existed, but it became intolerable after it was identified as one of the important reasons for stagnation and misery.*

It is again a truism that a satisfactory tenure system keeps the holding as close as possible to the economic unit. But it remains the crucial problem of agrarian policy as a whole to direct the continuous adjustment process in such a way that, in the course of changing technical production conditions, market trend and population patterns, agricultural holdings remain economical. It may be doubted, however, if such an objective can be attained in the majority of the countries without a complementary industrial development which makes it possible to transfer excess manpower from agriculture to industry and to expand agricultural holdings at the expense of uneconomic undersized farm units.

## II. VARIOUS TYPES OF HOLDINGS IN RELATION TO THE PROCESS OF AGRICULTURAL DEVELOPMENT

It is inherent in the dynamic advances at the first stages of development that the changes in the system of land holding occur generally as natural adjustments due primarily to economic causes, while at later stages the changes most frequently are the results of policy decisions. This entails a very substantial difference which has to be kept in mind when existing tenure conditions are examined and decisions taken on future agrarian policies. In the early stages changes appear in the light of a conflict between established custom and new practices which means that the economic development forces its way without any restrictions; custom has no more than a delaying effect. At later stages legal concepts, ideologies, and thoroughly considered schemes have the chance to exert a considerable impact

1. C. K. Meek, *Land Law and Custom in The Colonies*, London: Oxford University Press, 1946

on development and to form adjustment. In this way the English common, or statutory, law of property has had a general influence on shaping the systems of land tenure in many of the British Colonies. In these Colonies, land alienated by the Crown to settlers was at earlier stages granted or sold on terms equivalent to freehold, while later on preference was given to a system of long leasehold, which was more suitable for economically inexperienced settlers.

But such events should not conceal the very close interdependence of crops and land-use patterns with the type of holdings. In this field, however, the risk of over-simplification is particularly great. The process of shaping the agrarian structure in a country is based on a very delicate balance between various factors. Fortunately, this balance can to a considerable extent be influenced by social and legal engineering.

An agrarian policy, of which the objective is the establishment of workable agricultural holdings, has to give specific attention to the stage of transition from one economic system to another. This transition is frequently the result of considerable capital investments, often in connection with irrigation, the introduction of advanced techniques, and communications. The change is particularly painful at the early stage of development when capital investment and commercial trading penetrate indigenous tribal societies and change the established equilibrium of social life with its traditional relationship of the tribal group or clan to the land. But the change is no less distressing when the individually settled, but hopelessly indebted, peasant has to face the loss of his land to superior economic forces. Agrarian policy has to design, at different stages of development, types of holdings which allow an elastic defence and advancement of the economic and social interest of the cultivators in the course of agricultural development.

Decisions on types of holdings and farm sizes are, however, of importance not only for the most efficient use of the land contained in the individual holding, but equally for the region as a whole. Consequently agrarian policy has to be focused on regional development, which has a wider scope than the technical advancement of the individual holding. I will revert to this aspect in connection with the examination of the position of large estates and plantations in agricultural development.

## TRIBAL TENURE

Tribal tenure is a complex system comprised of a variety of types of land holdings which are authorized or controlled by tribal authority. Its scope extends from systems with strongly emphasized communal aspects to schemes marked by more individualized features. It covers both the migratory shifting cultivation system and settled agriculture, but the ultimate control of the land is always with the tribal authorities because the Western concept of transferable property rights in land cannot be reconciled with the principle of tribal tenure. Native land owned under customary law is for sale only by Tribal Act, which practically excludes commercial transactions.

The communal system under which nobody has a claim to a specific plot of land, and under which the principle of periodical land reallocation is applied, is most frequently identified with tribal tenure. Although tribal systems exist with more individualized features, at its initial stage tribal tenure is strictly communal tenure. Land is distributed amongst the clans or families according to their numbers and working capacity. But even in tribal systems where more individual features are recognizable, uncultivated land is largely used as common pasture. Regulations concerned with rotational grazing and preservation of grazing boundaries are, however, not frequent, and regulations on soil fertilization and reservations of communal grounds are often unknown, or not complied with, particularly where tribal authority has begun to weaken. Overstocking, and the exposure of soil to erosion, are frequently observed in areas under tribal control.

When the population pressure gets heavier and the recovery periods of the forest are shortened, exhaustion of the soil is a frequent feature in areas under shifting cultivation.

Within the framework of tribal tenure, the cultivating group enjoys a maximum of legal security. As long as no pressure on the land exists and the man-land ratio remains favourable, the system will guarantee a reasonable standard of living on the level of subsistence economy, since increasing population and cattle figures have not yet upset the balance and resulted in exhausting agricultural practices.

Tribal tenure recognizes within its concept some well-defined rights, the so-called "usufructuary" rights to land of kindred groups, clans, or subdivisions of clans. These rights are based on the effective occupancy and cultivation of land. Usufructuary rights expire when the land is no longer under cultivation, and in this case it generally returns to the public domain. The produce of the land, however, becomes the exclusive property of the cultivator.

Once the practice of tree-planting and planting of perennial crops is established, tribal tenure has to be adjusted. It extends the principle of exclusive possession to the trees, and finally to the soil itself, although the land remains untransferable by commercial transactions. When marketable crops take the place of subsistence crops, the tribal cultivator has to define more clearly the boundaries of his land, and the cultivating unit is gradually reduced from the clan to the individual family. This step virtually concludes the process of individualization of tenure and makes possible the accelerated introduction of cash crops, while the previous system of tribal tenure did not give the individual cultivator satisfactory security for his considerable investments in terms of labour, and frequently even of money. Such investments are usually necessary since considerable and extensive efforts for soil conservation have to be made to improve the soil resources before the first commercial crop can be planted.

## TYPES OF INDIVIDUAL HOLDING: OWNER-CULTIVATORSHIP, LONG-TERM LEASEHOLD, LANDLORDISM-TENANCY

The individualization of tenure has led to a large variety of types of holdings which have as a common feature individual management and individual risk, but differ largely in the way they reward the various factors engaged in agricultural production and provide security for the actual cultivator. Another possible classification would be according to size and to the extent to which the various types of holdings employ non-family labour.

The full *ownership concept*, in contrast to the long-term leasehold, gives the owner virtually full opportunity to utilize the land in accordance with his wishes. Limitations do not exist except with respect to the classification as agricultural land, to legal obligations with regard to road construction, and to the owner's responsibility as concerns the neighbours' rights and legitimate interests. This system doubtless provides maximum security for the cultivator on his land, and assures him full rewards for his efforts, including the results from his improvements. But at the same time, it demands highly technical and economic "know-how". It is dependent on well-functioning institutional services in the fields of extension, credit, marketing and storage, particularly in areas where the cultivators are still inexperienced in technical and economic matters and exposed to superior economic forces. In economically- and institutionally-advanced areas the system provides considerable incentives to develop agricultural production to the maximum extent of skill, knowledge and resources.

A characteristic feature of the old peasant systems, founded on the basis of owner-cultivation, is their trend to successive subdivision and fragmentation, which is particularly serious in Moslem areas with their rigid inheritance rules

based on the principle of real division. This leads not only to the establishment of very small and undersized farms, but also to the dispersal of fields in the same farm. The result is frequently the creation of the so-called "strip" farms, which cannot be managed economically, and consequently raises the costs of efficient land use in the area.

The *long-term leasehold* does not establish unrestricted property rights but only occupancy rights for limited periods, mostly 30-60-90 years, with reasonable assurance for prolongation of the lease. The extent of the right of occupancy of land depends generally on its use — whether for agricultural or pastoral purposes. In grants and licences conveying occupancy rights there are usually stipulations that the land must be beneficially used within a given period, and that the use to which it is put must be to the common benefit of the region. Generally such leases are subject to withdrawal, particularly in newly-developing areas, if the leaseholder does not comply with the terms of the lease.

The establishment of long leases is in the interest of rational land use particularly in the newly-developing areas which were recently opened to commercialized agriculture. The transition from a rapidly disintegrating tribal system based on unrestricted ownership is dangerous, since indigenous people are neither materially nor mentally prepared for such a system. Primitive cultivators might easily lose their land to speculators and commercial interests, with the result that a class of landlords emerges having a high share in the returns of the land but performing no useful function in the process of production. Finally, a leasehold system can better counteract the trend to fragmentation.

The well-timed establishment of long-term leaseholds might help to delay the rapid disintegration of the tribal community and so prevent a vacuum of law and order often attended by banditry or destitution and misery. In large areas of Africa under British control, tribal authorities have been integrated into the administrative machinery which controls the long-term leaseholds in close co-operation with the extension services, thus ensuring the rational use of land. In the same areas, successful efforts have been made to maintain and improve time-honoured — but never registered — grazing grounds, while elsewhere nomadic tribes were pressed into submarginal areas which quickly became overgrazed and left the people the choice between starvation and harrassing settled agricultural communities.

*Landlordism-tenancy* presents a way of close cooperation between capital and labour. The payment of rents naturally involves a diminution in the net income of the cultivator, but under a good tenancy system this may be offset either directly by relief from liability from other capital charges, or indirectly through the advantages of increased stability of income. This, however, is only the case if the tenant enjoys security on his land conditional upon reasonably good farming, and is assured of adequate rewards for his efforts, including the results from his land improvements. Another advantage of the tenancy is that it frequently provides the possibility for the cultivator to obtain a larger and more economic unit than he could afford if he had to buy a holding. A bad system of tenancy may result in a peasant being deprived of such income as is his due and his security left at the mercy of the landlord. It is generally recognized that insecurity of tenancy, for whatever reason, contributes to agricultural stagnation, since it prevents the farmer from making the necessary investment in labour and capital.

In the newly-developing areas in Asia and Latin America the landlords are, in most cases, absentee landlords who are not so much interested in increasing agricultural productivity as they are concerned with money-lending. No less important is the fact that land ownership is for them the basis for social and political prestige. The tenants, on the other hand, feeling insecure and having no knowledge of more advanced agricultural techniques, live in misery and are unable to make any contribution to agricultural progress. Such defective tenure

systems exist today in large areas of the world and are the greatest obstacle to more rational land use; they virtually prevent agricultural progress. Only the most generous provision of institutional services such as credit, extension, marketing services, etc., can strengthen the economic and social position of the cultivator to an extent which gives him sufficient bargaining capacity in relation to the landlord. Without such measures even the most progressive tenancy legislation will not work, and agriculture will continue to stagnate.

In this connection a few words may be added which concern the introduction of irrigation systems in arid areas with land ownership concentration. In these regions arrangements have to be made to assure that the economic benefits of the project will result in increased production and more equally distributed income. In villages with tenant cultivators, therefore, it may be advisable to make the tenant, and not the landlord, pay the water rates, and in return to give the tenants all the profits of the additional output from the land, while the rents payable to the landlords should not be increased above the average level of say the last five years. Such arrangements are in the interest of increased agricultural production, because they reward the additional efforts of the cultivator which finally determine the success of the whole scheme. However this is conditional upon the irrigation system becoming public property and not the property of the landlords.

### CENTRALLY-OPERATED ESTATES

The centrally-operated estates and plantations are often outstanding examples of advanced farming methods. They have served in large areas of the world with their imported capital and management, as pilot projects for technical efficiency, and in a few areas, for instance Malaya and Indonesia, as an illustration of a high standard of employment conditions and social security. But, on the other hand, they have always resulted in the social demotion of the indigenous cultivator to a landless worker who lives in complete social and economic dependence on the plantation without any responsibility of his own.

In spite of its high technical capacity and potentiality, the position of the centrally-operated estate as a desirable tenure type may be questioned, due to the following reasons:—

(1) It can never give any opportunity above well-paid employment and will not provide the spiritual uplift which accompanies the shouldering of social responsibilities, as is the case of owner-cultivator farms, and even under well-arranged tenancy conditions. In comparison with the plantation worker, the member of a well-organized cooperative farm has a greater share in the responsibilities of the farm and the possibility to advance up the ladder of cooperative management.

(2) It tends to exert considerable, but not always favourable, influence on the patterns of land distribution and land utilization, and to shape the terms for rents and wages in the locality and frequently in a still much larger area. Large estates have often tended to occupy the best lands in the valleys, and to press back the small cultivator to the meagre and marginal lands in the hills. Since the amount of arable land there is generally limited, minute subdivision and often excessive fragmentation with all their unfavourable effects on agricultural production and social living standards are the immediate results. In Java, for instance, the long-lease sugar plantations before the war have changed the patterns of land distribution and land use by coordinating rice and other crops in a large-scale agricultural program. This has certainly led to great agricultural developments, but on the other hand, it has locally narrowed the margin of rice cultivation in the over-populated island.

(3) The prevalence of plantations with their emphasis on monoculture may result in a structural weakness of the economic system of the area, thereby increasing its vulnerability during a depression, as was the case in Cuba and Malaya in the thirties, with the most detrimental result for agricultural production.

There is little doubt that the plantation, as a type of agricultural production unit in large areas of the world, is on the decline, and that as a whole the balance appears to be changing in the direction of greater reliance on peasant holdings, wherever it is technically possible. It has rightly been stated that "the establishment of the cultivation of revenue crops by large numbers of peasants is as much a political characteristic of the Twentieth Century policy as the establishment of the plantation system was of the Seventeenth Century policy."[2]

GROUP FARMING

The great advantages associated with large-scale production which are always stressed as a striking argument in favour of plantation economy, can also be claimed in respect of group farming. These advantages may be secured both on communal farms in which all property is held in common, all risks borne in common, all labour pooled, and most consumer goods and services commonly provided and shared, as is the case in the kibbutzims in Israel, and on collective farms where labour is wholly or largely pooled, but the net income is divided according to the amount and quality of the individual work, as is the case in China and Russia. During the post-war period, with its advancing mechanization of agriculture and its demand for large-scale production, individual peasant farming in some parts of Asia is giving way to group farming of one type or another.

It is a fact that large areas of the world are crowded with minute submarginal peasant holdings which give to the cultivator and his family no more than a living standard close to starvation level. Personal initiative has no place under these conditions. The organization of farming along more advanced lines is blocked by the small scale of the operations, the shortage of credit, extension and training facilities; the whole economic and social environment prevents energetic effort; and narrow-minded tradition dominates the daily routine of the cultivator and prohibits additional efforts which would hardly pay. Under such conditions unified management of group farms may provide at least a fair chance for better organized work, for large-scale farm operations, and for the application of advanced agricultural methods.

The introduction of group farming may be a short cut to the provision of adequate institutional services which could not otherwise be provided in the lifetime of the present generation, but which are necessary for promoting agricultural progress and for modifying the land-use pattern of the region. A highly desirable side-effect of group farming is generally the reduction of agricultural underemployment which marks individual farms in many underdeveloped areas. Group farming may open the way for the employment of the available labour force in a more efficient manner by the introduction of labour-intensive crops on a large scale. This happened, for instance, in Mexico, where the newly established collective *ejidos* introduced on a large scale the cultivation of cotton in lieu of wheat. The reason for this change was the difference in the calculation of benefits by the private estate-owner and the collective management, which resulted in a different approach to the whole problem of land utilization.

One of the basic problems of group farming is the organization of the work and the provision of incentives for harder work. It is well known that some

2. I. C. Graves, *Modern Production Among Backward People*, London, 1935.

highly spirited groups have been able to develop their farms successfully on a communal basis, although additional personal effort was not rewarded and everyone was paid according to his needs. The modern collective farm type developed in Russia and China does not use this generous principle, but has built up a piecework system in accordance with the principle "to each according to his work".

## III. VARIOUS LEGAL AND SOCIO-ECONOMIC ASPECTS

The various systems of land holding present many problems of legal, technical, and socio-economic nature, which cannot be dealt with within the framework of the lecture. To the extent possible I have attempted to indicate them in the review of the various types of holdings, but I am fully aware of the shortcomings of this procedure. I feel, however, that it is necessary to touch at least on some aspects of a few significant problems which affect the man on the land: (1) in the sphere of legal protection of his rights, (2) in the way in which his rights are transferred to the next generation, and (3) in the way the holdings can be reorganized and maintained as workable economic units.

### RECORD OF RIGHTS IN LAND

The proper system of cadastral survey and registration of rights is essential to a real understanding of the agrarian situation in a region. It is of equal importance in areas with private ownership, or with customary rights as prevailing features of the tenure system. In areas where indigenous communities hold land, land registration should not be based on Western conceptions and methods of registration of individual titles, as such registration may create rights inconsistent with the existing social groupings. In the case of traditional communities, registration should be made in favour of such communities. If a communal system is disintegrating, the recording of individual rights should be very carefully made on the basis of the family's occupation of the land (and not, for instance, in favour of the tribal chief only), with proper restrictions in order to avoid the establishment of landlordism.

In the case of surveying and rights-recording, specific attention has to be given to the clear definition of the true area of communal land. Since in the usual legal terminology "vacant land" is "all land other than tribal land", the definition of the term "tribal land" becomes crucial, and must be made in accordance with customary law, which covers not only land cultivated or in actual agricultural use, but also uncultivated land. A superficial recording of indigenous communal or individual rights in land will involve great injustice, and necessarily lead to an abrupt disintegration of the indigenous community and to the loss of the land for the majority of the people. Measures have to be taken to make the people understand the objectives and techniques of registration; registration officers should look after the indigenous communities, who should never be penalized for their lack of knowledge concerning the right procedures to adopt.

### TRANSFER OF RIGHTS BY INHERITANCE

We have seen that the succession of generations within the framework of established inheritance rules has a decisive impact on the size, shape and lay-out of the holdings. The impact of inheritance rules, very naturally, is greatest in the old settled peasant areas based on owner-cultivation, and here the trend of excessive fragmentation of the holdings is particularly dangerous to the maintenance of rational standards of land utilization.

The adjustment between agricultural resources and farm management is a continuous process which has to be accomplished in accordance with the needs of agricultural development. This process, however, can be hampered and even distorted by inheritance rules which might promote minute subdivision and fragmentation and stand in the way of efficient farm management. A satisfactory

solution of the inheritance problem is decisive for the future economic success in large areas of peasant farming all over the world. Experience has proved that the establishment of minimum sizes will not be sufficient to stop fragmentation on the land-use level. In the final results, it may even lead to serious discrepancies between the land records and the actual situation in the field. In some European countries quite favourable results were achieved by making subdivision of holdings dependent on the approval of the authorities concerned, if this system was combined with regulations — as is the case in Sweden, which favours holdings in administrative arrangements (grants, mortgages, etc.) that are not illegally subdivided.

The most promising way, however, is to establish conditions that are favourable for the prevention of fragmentation. This could be done by a combination of an educational campaign and the mobilization, at reasonable terms, of credit for the heir who wishes to take over the partner's share in a jointly held estate.

No doubt conditions in Islamic areas are more complicated, and here the educational campaign should be carried out in close cooperation with dignitaries and clerical personalities to advocate, in the national interest, a more liberal interpretation of the Moslem inheritance rules.

## LAND CONSOLIDATION AND IMPROVEMENT OF THE AGRARIAN STRUCTURE

Land consolidation, as an essential part of agrarian reconstruction is of specific importance in the old peasant areas where holdings are subdivided from generation to generation; but fragmentation can be encountered also in connection with other forms of land tenure. Land consolidation is concerned with the task of agrarian reconstruction which comprises reallocation of parcels, land reclamation and soil improvement measures, improvements in the farm size pattern and in the settlement pattern. The ways of readjustment of farm management and land-use practices belong to land consolidation work, since the holding has to be fitted into the most adequate land-use pattern.

With land consolidation in this broadest sense of the term, agrarian policy rises above the level of the individual holdings and reaches the level of regional and general economic planning. In the highly advanced countries of Western Europe land consolidation is carried out with a view to contributing to the equalization of the technical, economic and social conditions for agricultural and industrial labour. In the less advanced areas its main objective is to establish holdings which give adequate employment and support to the cultivator and his family; at the same time it should facilitate more advanced agricultural methods.

But always, and at every stage of the development, agrarian reconstruction is the right instrument to provide the existing tenure system with the degree of flexibility needed for the continuous process of adjustment to economic growth and changing land-use patterns.

# THE INTERDEPENDENT DEVELOPMENT OF AGRICULTURE AND OTHER INDUSTRIES

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## STATEMENT OF THE PROBLEM

While I am unrepentant regarding my unorthodox approach[1], I must first apologise for the inadequacies and unevenness in the presentation of this paper.

Fundamentally my objective is to present for discussion and criticism a point of view regarding our problem, namely what scope is there for national and international action in the interdependent development of agriculture and other industries? I am offering merely an approach to a difficult problem; I am not offering any formulae, models or solutions.

I shall concern myself with the problem of economic development in the backward countries. In other words, I shall omit discussion of the scope for national and international action in the development of agriculture or of other industries in the advanced countries. I shall also omit any discussion in which the state is responsible for organising the total economy.

Let me commence by explaining the terms that will be used in this paper.

In the backward[2] countries the term agriculture must embrace a much wider scope than it usually does in the other countries. Personally I prefer the term rural to agricultural but to keep within the titles allotted to me, I shall use 'agriculure'. However, I shall take the term agriculture to include not only the production and sale of crops and livestock products, etc., but also fishing activities

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I am indebted to Dr. Lim Tay Boh and to Dr. You Poh Seng for useful criticisms, but the views expressed are my own.

1. Cf. Myrdal, G., *Economic Theory and Under-developed Regions*, London, 1957, p.101:
"In this epoch of the Great Awakening, it would be pathetic if young economists in the under-developed countries got led astray by the predilections of the economic thinking in the advanced countries, which are hampering the scholars there in their efforts to be rational, but would be almost fatal to the intellectual strivings of those in the under-developed countries."
"I would instead wish them to have the courage to throw away large structures of meaningless, irrelevant and sometimes blatantly inadequate doctrines and theoretical approaches, and to start their thinking afresh from a study of their own needs and problems."

2. Backward countries are those without a significant industrial sector and where the rural sector is characterised by poverty.
See also: Myint, H. 'An Interpretation of Economic Backwardness,' *Oxford Economic Papers*, New Series, Vol. 6, No. 2, June 1954, pp. 132-163; and Itagaki, Y., 'The Problem of Economic Backwardness and the History of Economic Development', *The Annals of the Hitotsubashi Academy*, III: 1, Oct. 1957, pp. 20-28.

(in salt and fresh water), and activities related to the production of jungle products like timber, resin and canes including riparian[3] economic activities.

The significance of this wider connotation is that the straightforward application of agricultural economic theory as it has been developed in most of the English language textbooks and journals will not help to solve the basic problems of agricultural development in the backward countries.

I have defined the concept of development in the following terms:—

> "Agricultural (or rural) development is the planned process which uses any type of action or communication designed to affect the institutions, techniques, environment and minds of the rural people in such a manner as to raise their standard of living and improve their way of life."

A higher standard of living can be demonstrated by statistical observations of the material conditions of living. Even improvements in the way of life can be assessed objectively once the criteria regarding education, medical facilities, sanitation, nutrition, cultural and recreational facilities have been laid down.

In carrying out economic development at any given time and place, the principle of economy must never be overlooked. Robbins has described[4] this as the disposal of scarce means that have alternative uses for the achievement of given objectives. However, this principle which is excellent for a static analysis must be complemented by a second principle so that a dynamic approach towards economic development may be obtained. Myrdal[5] has called this "the principle of circular causation and the tendency for a social process to become cumulative and often to gather speed at an accelerating rate". This can be called the principle of cumulative causation.

Thus although at any one time we must face the problem of limited resources, with proper regard for the principle of cumulative causation we can plan to achieve vast changes of an economic as well as non-economic nature from correct disposal of the scarce resources.

Thus an investment of money and staff in a land reform programme may increase output to a much greater extent than similar expenditures in a fertilizer programme although in terms of static analysis the fertilizer scheme may appear to offer better returns.

With the above definitions and principles in mind we may proceed to consider the four main possibilities that confront us:—

(1) To develop agriculture at the expense or neglect of other industries, believing that other industries can only be developed when agriculture is well developed.

(2) To develop other industries at the expense of agriculture believing that only a highly developed manufacturing sector will create the surplus and the markets for an expanding agriculture.

(3) To move in a series of short-term zigzags developing first one then the other and coordinating each stage so as to provide an impetus as well as a source of economic power for the other to develop.

(4) Simultaneous development of both agriculture and other industries.

The second and fourth possibilities would appear unrealistic in the context of a backward country that plans economic development but does not intend to place the whole economy under state control.

3. E.g. production of attap or thatch manufactured from the leaves of the nipah palm.

4. Robbins, L., *An Essay on the Nature and Significance of Economic Science*, London, 1932, Ch. 1.

5. Op. cit., p. 13.

However, which of these possibilities is chosen will depend on the arrangement of resources within a particular country as well as the type of economic organisation that prevails.

Thus a country that has the bulk of its agricultural land and labour resources tied up in the production of rubber and rice is not likely to be able to turn its agricultural production towards the development of a big textile industry or an extensive food processing industry. It would be better for it to use its rubber to buy imports of capital goods for such industrial development as appears most desirable for the fulfilment of its economic development plan.

## CAUSES OF RURAL POVERTY

For most of the backward regions the following conditions are likely to prevail to a lesser or greater degree.

The agricultural sector will generally consist of one or more export crops that are grown on plantations, as well as export crops and locally consumed crops produced on native farms.

The impact of Western imperialism[6] on farming in what are now the backward regions was to disrupt the balance of village autarchy.[7] Of special importance were the extensive monetization of the economy and the enforcement of changes in land tenure, crop patterns and labour status to fit the demands of the imperialist power. This brought about the disintegration of the traditional villages as well as an increase in poverty. This increase in poverty may appear paradoxical since the natives in fact often have more material goods than before. However a closer examination will reveal that not only is village wealth much more unevenly distributed than previously but also there are certain trends in the ownership of land and capital equipment that indicate that a smaller and smaller proportion of people are coming to own larger and larger shares of the land and capital in the village.

With the rise in monopolistic tendencies in most parts of the economy there is increasing exploitation of the peasant farmers and plantation workers by landlords, moneylenders and merchants.

Between 60% and 90% of the total population of the backward countries will be found in the rural areas. Thus progress in agriculture will have a direct impact on the bulk of the population whereas the development of other industries will be felt only in an indirect way.

This is the crux of rural poverty.

Before examining conditions prevailing in the other industries, I should like to point out that these can include:—

(a) Heavy industry (e.g steel works, ship yards)
(b) Light industry (textile manufacturing or radio assembly)
(c) Rural industry (i.e. located in rural areas but organised as a factory)
(d) Cottage industry (located in farm houses).

These are not exclusive categories.

6. Western imperialism is preferable to colonialism as a term because it clearly includes economic as well as political influences, whereas the latter may only be associated with a special political status.

7. Cf. "In actual fact the record of every imperial power in Africa in modern times is one of impoverishing the subsistance economy, either by taking away peoples' land, or by demanding forced labour in the capitalist sector, or by imposing taxes to drive people to work", Lewis, W. A., 'Economic Development with Unlimited Supplies of Labour', in *The Manchester School of Economic and Social Studies*, XXII, 2, 1954, p. 149.

The impact of Western imperialism has been to destroy cottage industries, to neglect the development of rural industries, to prevent the growth of heavy industry and to allow the establishment of some light industries particularly assembling plants.

In the light of this background we are now ready to consider the consequences of an attempt to create economic development paying special attention to problems arising out of the interrelationship between agriculture and other industries.

In other words, how can poverty be eliminated from the national economy?

In this context poverty has three causes, namely low productivity, exploitation and neglect. Thus, we must see how agriculture and other industries can be developed in such a way that poverty is eliminated through the elimination or counteraction of these three causes.

LOW PRODUCTIVITY

Agriculture in the background countries is characterised by low productivity. This is particularly true of native agriculture. However even plantation agriculture, with the possibility of cheap and abundant supplies of land and labour, does not generally aim at high productivity per unit of land or labour.

In order to raise productivity we must not only teach native farmers how to use better seeds, tools and fertilizers as well as better farming techniques, but we must also provide them adequately with the necessary working capital to do so.

Here is our problem in miniature. Let us say there are limited funds for a development bank and also a limited number of trained personnel. Shall we set up a Farm Credit Organisation, Industrial Development Bank or a general purpose National Development Bank?

Many Governments want to bet on all horses and make sure of getting a winner and so they choose the general purpose National Development Bank. In effect they try to spread their limited resources on too wide a front and finally fail to achieve a significant impact anywhere.

Industrial development will need foreign technicians as well as foreign loans or grants. The method for ensuring that such loans, etc., do not jeopardise the political future of the country is itself a subject for politicians and not for this paper. The fact is that foreign aid and foreign loans are being organised successfully in many countries.

Naturally, if the plan for agricultural development includes rapid mechanisation or extensive use of chemical fertilizers or some other intensive application of an industrial product, then some resources will have to be denied to agriculture and devoted to the industrial development associated with the production of these items.

Agricultural and industrial development do not take place in a vacuum. One must never forget the effects as well as the needs of economies of scale. Thus a fertilizer plan will involve development of power sources as well as the need to find markets for certain by-products.

How far all these requirements can be integrated is determined by certain technical functions. In its best form this type of development is seen in valley schemes like the Damodar Valley project in India or the Tennessee Valley Authority in the United States of America.

EXPLOITATION

Let us now consider exploitation which is the second cause of rural poverty.

A simple example of what I have in mind is the terms of trade that prevail between agriculture and the other industries. By and large if free competition

prevails the terms of trade tend to be unfavourable to the farmers. The efforts of the United States government to provide "parity" schemes are a good illustration of an attempt to deal with such a situation.

In the backward countries the farmers seem to be exploited "every possible which way". The terms of trade are unfavourable to them. This applies to imported goods as well as locally produced goods. In addition they have to bear heavy rents and other payments charged by powerful landlords, not to mention insecurity of tenure. They also have to pay to unscrupulous moneylenders exorbitant rates of interest on debts that never seem to get settled. The unfavourable terms of trade are made doubly so by the margins that are charged by monopsonistic and monopolistic traders who buy their produce and often sell them their requirements.

In brief, agricultural development means putting an end to the depredations of landlords, moneylenders and monopolistic merchants.

This may not appear to have many direct connections with industrial development. These exploiting groups are not likely to transfer their capital towards industrial development. However when they are frustrated in the agricultural sector, they will go in for black marketing and corrupt dealing which may weaken the financial controls necessary in any economic development plan.

In the process of achieving agricultural development the state may decide to organise or plan whole sections of the economy, e.g. fruit marketing or transport of rural produce on a cooperative basis. Or it may even decide to operate it as a state-managed project. Whatever it is, it is not likely that private enterprise or the capitalistic system is going to be encouraged in that sector where there is an attempt to cure the evils of exploitations of farmers. This may have some psychological impact on the flow of private investment into the development of other industries. Therefore an assurance may be necessary that non-exploitative private investment in industry will be welcome.

NEGLECT

The third cause of rural poverty is neglect.

Western trained economists, especially those who are schooled in the highly refined and complex analytical apparatus of social accounting, econometrics and even Keynesianistic margins, are apt to miss the wood for the trees in the jungles of the backward countries.

The fact is that in the backward countries government budgets are largely spent on urban development. Roads, hospitals and schools are largely for the benefit of the towns. The farm population who make the biggest contribution towards the national output as well as to the taxation (which is largely indirect) are invariably neglected. The only areas outside the towns that are properly serviced with roads, electricity and health services are the foreign-owned plantations and mines.

If other industries are to be developed near the urban centres, then this neglect will be perpetuated. Therefore a vital requirement is that the location of industrial sites will be integrated with agricultural development plans.

In fact this will encounter many difficulties. The road, water and power facilities will be poor. Rural labour will be less well educated. Urban labour, especially the managerial and supervisory groups, will dislike going to these areas for lack of recreational facilities etc. A consequence of the "factory-ization" of village workers will be further disintegration of the village economy and the village way of life.

The training of agricultural economists in universities modelled on those of the advanced countries using texts and methods which may be very appropriate in

such countries also helps to exacerbate this process of neglect. The training system should be adapted to the special needs of the backward countries. This means not only better text books and improved teaching techniques, but also a proper approach towards the relationship between the intellectual and the farmer.

Thus low productivity, exploitation and neglect cause rural poverty. Agricultural development means the elimination of these three causes. Not only must scarce resources be wisely (or economically) deployed in this battle against the causes of poverty, but constant attention should be given to the possibilities of the effects to be obtained from the cumulative process of circular causation. It is to be noted that this principle can operate in reverse to cause colossal failures with aftereffects that will tend to negate or neutralise subsequent development plans for a long while.

With a view to making the analysis more specific I shall now examine how certain important aspects of each of the factors of production stand in the light of the basic problem, namely, the interdependent development of agriculture and other industries.

All factors will be examined from the point of view of mobility between the sectors and of organisation within each sector.

## FACTORS OF PRODUCTION AND DEVELOPMENT

### LABOUR

Many economists have a number of beliefs regarding labour in the backward countries. Some are myths and some have a rational economic basis.

One of the most popular ideas about labour in the backward countries is that the elasticity of demand for income is negative.[8] There is no empirical study demonstrating the "laziness" of the native and all the writers saying so merely demonstrate their own predilection to make rationalisations and their ignorance, which Myrdal says, "is seldom random but highly opportunistic".[9] In fact all the field studies made indicate that "native" labour is quite sensitive and sensible to price changes.[10]

This aspect is important for the outlook and attitudes of planners. If they accept a positive elasticity of demand for income on the part of agricultural labour then the wage system can be a major incentive for labour to move from agriculture to other industries.

However, other influences can be equally important.

Thus in anticipating any changes in the supply of labour either in agriculture or in the movement of labour between agriculture and other industries the following influences should be taken into account:—

(a) The motive for production. That is, production for home consumption should be differentiated from production for the market.

8. Aziz, U. A., 'The Development and Utilization of Labour Resources in Southeast Asia', in *Nationalism and Progress in Free Asia,* Thayer P. W. (ed.), John Hopkins, 1956. pp. 193-203.

9. Op. cit. p. 123.

10. Cf. Graves, I. C. *Modern Production Among Backward People,* L.S.E. Studies No. 5, 1935, pp. 163-5.

Rotternberg, S. 'Income and Leisure in an Underdeveloped Economy', *Journal of Political Economy,* LX, 2, April 1952, 95 ff.

Ladd, G. W. 'Farm Income and the supply of Agricultural Products', *Journal of Farm Economics,* XXXIX, 4. Nov. 1957, 865 ff.

My own unpublished researches among rubber and rice farmers and fishermen in Malaya all indicate a positive elasticity in the demand for income by rural labour.

(b) The general availability of consumer goods and especially the semi-durables. This will have considerable influence on attitudes towards money incentives.

(c) Obstacles of a social or cultural nature. Stigma or taboo may be associated with certain types of work.

(d) Government policies especially in dealing with unrest or militant uprisings. These may affect willingness and capacity for work.

(e) Net real earnings, which must be considered rather than the cash difference between two occupations. Rural labour may be thinking in units and using a time sequence different from those of the economists who are anticipating a movement of labour from agriculture to other industries.

A second idea about backward agricultural labour is that it is often underemployed. In fact this underemployment may be seasonal or chronic,[11] or non-existent.

If the underemployment is seasonal then the development of other industries in the rural areas will be particularly effective in raising the general standard of living. Success will depend on the other influences on the mobility of labour such as skills and communications, etc., being favourable.

It should be stressed that seasonal underemployment implies that if a portion of labour is permanently removed then the total output will be reduced. Thus at the peak period of demand for labour in padi harvesting some of the crop would be lost because of inadequate supply of labour.

If the underemployment is chronic then the problem will be much more complicated than that of simply taking off a certain surplus number of chronically underemployed individuals. It is likely that the most chronically underemployed individuals will be the most unsuccessful farmers and least able persons from the point of view of physique, age, education (or I.Q.), adaptability, etc. On the other hand the people who are most likely to be ready to move are the more able of the local farmers. They will be the most flexible and the most mobile. Their loss in turn will have serious cumulative repercussions on the village economy.

Thus it will be seen that whereas seasonal underemployment can be adjusted by planning the development of other industries, chronic underemployment requires drastic treatment. It may require establishment of a new industry that will take whole communities out of agriculture.

On the other hand in some countries like Malaya where land is not so scarce a resource, it may be better to deal with chronic underemployment through agrarian reforms and land settlement schemes.

A third idea about agricultural labour is disguised unemployment.[12] This is qualitatively and quantitatively different from underemployment. Here emphasis is on the type of work done. Typical examples are the lottery ticket sellers and car watchers to be found in most of the big cities[13] in the backward countries.

11. Chiang Hsieh. 'Underemployment in Asia', *International Labour Review*, 65, 1952, p. 703 ff.

12. Cf. Joan Robinson, *Essays in the Theory of Employment*, London, 1937, pp. 82-101 for this concept in an urban setting.

13. Cf. Navarette, A. Jr., and De Navarette, I.M., 'Underemployment in Underdeveloped Economies', *International Economic Papers*, No. 3, London, 1953, pp. 235-239, for Mexican examples.

In the rural areas there are the petty merchants and "brokers" or petition writers who haunt the rural coffee shops. Then there are the men who are always standing by at local loading or unloading points for boats, trucks, etc., to lend a hand and get paid a little something and perhaps manage to pinch a little something else on the side.

If they are to be absorbed by the development of other industries then it must be demonstrated that there will be categories of employment that will attract such types.

A particular complication that can be found in any of the backward Asian countries is racial specialisation of labour. This is a considerable hindrance towards the movement of labour from agriculture to other industries.

A small factory making light metal goods may be set up by a Chinese capitalist. He will tend to employ Chinese labour for reasons of language, skill and perhaps a feeling of community responsibility within his dialect group (e.g. Hokkien, Cantonese, etc.). He will find it inconvenient to employ Malays who are Muslims and therefore, for example, would not be prepared to share in the free midday meal that he would normally provide.[14]

When most of the capitalistic classes in a country belong to one or two racial groups and the peasants are of another group this produces tensions that have been well described by social scientists who have studied the economic problems of plural societies.[15]

The fact that these capitalists are exploiting the peasants of their own race is often overlooked by the political leaders of nationalistic movements based on the indigenous peasantry.[16]

The fundamental prerequisite for the solution of problems in this field is education. In most backward countries what little education there was in the past was based: (a) on the need to supply clerks and storekeepers for the colonial enterprises and government, and (b) on theological teaching that never got much further than the memorisation of dogmas.

A false linguistic *elite* was created that was not fit to do more than take orders from their masters who were rarely locally educated. Education in science and technology was invariably left out.

Education in agriculture in primary and secondary schools and at higher levels was pitifully neglected. Not only was there no teaching in agricultural economics but most governments did not have a single qualified agricultural economist on their staff.

Today a beginning is being made. There is an increasing awareness of the need for better and more useful education especially in the medium of the indigenous languages.

Agricultural economists are gradually making their value known. The fact that the ICAE is in Asia for the first time is itself symbolic of this new trend.

14. Chinese food is bound to contain pork or to be fried in lard which is forbidden to the Malays who are Muslims.

15. See Furnival, J. S. *Colonial Policy and Practice,* Cambridge U.P., 1948,
Emerson, R. *Malaysia,* New York, 1937,
Lewis, W. A. *Theory of Economic Growth,* London, 1955,

16. A curious perversion of this reasoning is found in Malaya where nationalist politicians are using their influence to augment non-Malay capitalists with a number of Malays in the name of rural development and "the improvement of the Malay economy".

But there is a vast gap to be closed before labour in agriculture can raise its productivity through education and also before it achieves that necessary degree of mobility and flexibility that will allow it to take full advantage of the development of other industries.

LAND

The significance of land in this context is not so much the competition between agriculture and other industries for physical space or for natural resources like water, but it is the impact of land as a factor of production on agriculture. There is also significant competition in the economic utilisation of land as a means of increasing the farmers' standard of living (I shall call this agrarian reform) and as a means for supplying the raw materials needed for the development of other industries.

If there is an absolute shortage of land in relation to the farm population, given the existing technology (e.g. India and Japan), or if the mechanisation of agriculture is likely to create a surplus of farm labour, then it is essential that all suitable types of other industries be developed so as to provide employment for the surplus working population.

However, in some countries such as Malaya, parts of Indonesia and the Philippines, there are still large areas of jungle that can be developed into farm land. In this case the supply of capital to agriculture for the creation of new and more efficient farms may be the best strategy for rapid development because this would provide higher farm incomes in the shortest possible period.

This new type of farm would take full advantages of the economies of scale through collective processing, collective use of heavy equipment, etc. and thus provide a big impetus for the development of the heavy industries rather than light or cottage industries.

One particular aspect of land economics that is common to all backward areas is the uneconomic organisation of the individual pieces of farm land in so far as the operation of such pieces of land is concerned.

In brief, farms very often consist of small fragmented pieces of land that are subdivided because of inheritance, indebtedness, etc. Further, the majority of farmers either are tenants or rent[17] at least one piece of their land.

There is a strong tendency for non-farming classes to invest in land rather than in industrial development.

The net effect of subdivision, fragmentation, extensive tenancy and a preference for land as a form of investment, i.e., a preference for absentee landlordism rather than for farm management, is to create a process that I have called "agglomeration", whereby the village farm lands come to be owned by increasingly smaller number of non-farmer owners[18] and where the pattern of ownership[19] is a fragmented one.

This process of agglomeration is a major cause of rural poverty. It leads to fragmentation in the operation of farms, high turnover of tenants and exploitation of tenants through high rents, insecurity of tenure, etc. Further, agglomerator-owners are not interested in well-planned, consolidated farms or efficiency in farm methods or conservation measures. This leads to a general decline in the productivity of land.

17. In many backward regions rents are from 25 to 55% of the gross output.

18. E.g. shopkeepers, moneylenders, government officials, "rich" non-farming peasants.

19. Not the pattern of operation in this case.

Because agglomerators are primarily interested in acquiring the maximum number of separate pieces of land irrespective of their location and because they are interested in high rents and tea-money,[20] therefore they create poverty in agriculture. They also help to augment the number of landless peasants.

In such a situation agrarian reforms are the main requirements for the development of agriculture. A by-product of such reforms will be the discouragement of speculation in land, and if the exploitation of tenant-farmers becomes unattractive, this will probably encourage some investment of capital and talent in the development of other industries.

However, probably the most significant results of agrarian reforms would be those coming from the creation of farms that either are fully organised as cooperatives or at least have their main economic activities organised cooperatively.

It would be relatively easier to coordinate the supply as well as the demand aspects of such farms with the needs and production plans of other industries.

The biggest shortage is that of skill in planning and organisation. A piecemeal land reform plan associated with the uncoordinated expansion of state-supported rural credit is not likely to crease any significant results. This is especially so if the plan is loosely associated with a government department for cooperative development which is a vague part of a scheme (or plan) to encourage some growth of other industries as well. Very often this is the real picture in the backward countries.

Agrarian reform, rural credit and the cooperative movement are often as dissociated from one another as they all are from the development of other industries.

CAPITAL

When most people think of development, the first factor of production that often occurs to them is capital. This is frequently the scarcest factor and also the factor which transcends national boundaries.

A very important aspect of the problem of allocating capital between agriculture and other industries for development is the source of such capital. That is, is it to be obtained *via* the mobilisation of domestic capital or is it to be obtained from foreign sources through trade, aid or loans?

As there are many excellent texts on the methods of mobilising domestic capital[21] and also no lack of theoretical as well as applied studies of the methods of allocating capital between the various sections of the economy, I shall only deal with certain aspects which seem to me to be given less emphasis than they deserve.

I am prepared to defend the statement: "In the backward countries capital is the basic tool for exploitation of farmers and other rural workers". The landlord, the moneylender and the merchant increase their wealth not so much by taking, respectively, economic rent, the rate of interest as related to the money market rate, and normal profits. In fact they use their capital to acquire all the farmers'

20. A "present" that must be given to the landlord by each new tenant and is often equal to half a year's rent. Sometimes a deposit equal to an interest-free loan may be demanded.

21. *Mobilisation of Domestic Capital*: Reports and Documents of the First and Second Working Parties of Experts, ECAFE refs. 1951: ST/ECAFE/4, 1952: E/CN 11/I & T/63, 1953: E/CN 11/I & T/81.

*Processes and Problems of Industrialisation in Under-developed Countries*, UN, 1955 (Ref. E2670. ST/ECA/29).

land in the village, to obtain a lien on the farmers' labour (thereby virtually making them serfs) and to obtain control over their crops (by forcing them to sell their crops in advance of harvest at low prices and to buy their necessities at monopsonistically enhanced prices).

In brief, capital manipulation causes rural poverty in the backward countries. And because conditions favour such exploitation, there is little incentive for such capitalists to invest in industrialisation.

Therefore it will be clearly seen that a prerequisite for agricultural development is an alteration of the role of capital in the rural economy.

This must come through the creation of new institutions like the cooperative movement and state-supported credit agencies and marketing boards.

Agrarian reforms to discourage landlordism and the rationalisation of the use of land by farmers are also directly associated not only with an increase in the possibility of mobilising savings in the rural areas (consequent upon higher incomes), but also with an increase in the flow of capital into industrial investment (consequent upon investors being "discouraged" from investing in land).

No quantitative changes in capital flows can have any significant impact on agricultural development without fundamental institutional changes in the rural economy.

One other topic that is relevant is the mechanisation of agriculture. If land and labour resources are favourably arranged, then a mechanisation programme can raise productivity very rapidly and this can create the necessary surplus not only for higher standards of living in agriculture but also for the industrial programme.

However, it may be that the mechanisation programme should not be carried out until the industrialisation programme has been successfully developed so as to produce the right kinds of equipment that are needed. Much of the agricultural machinery produced today is not specifically designed for tropical conditions or tropical crops.[22]

Finally, since it is likely that there will continue to be a large number of small farms in the backward countries, various forms of collective utilisation of capital will be an essential pattern if farmers are to have the benefit of efficient equipment. New institutions may have to be created to prevent local capitalists from continuing to exploit the farmers through their control of modern equipment.

## CONCLUSION

Structural defects and perversions in the economic organisation of most backward countries render it dangerous for economists (of all shades of political philosophy) to apply theories worked out within the historical context of the other countries for the solutions of the problems of the backward countries.

The basic problem of the backward countries is poverty and when we speak of development we mean the elimination of poverty. It is only when poverty is eliminated that we can begin to consider "raising the standard of living" or achieving "full employment".

22. See: *Report of a Survey of Problems in the Mechanisation of Native Agriculture in Tropical African Colonies,* HMSO, London, 1950, and *Considerations and Procedures for the successful introduction of Farm Mechanisation,* FAO, Dev. Paper No. 44, Rome, 1954.

Low productivity, exploitation and neglect are the main causes of poverty. Looked at from another angle the problem can be seen in terms of inherent distortions in the roles of the factors of production.

In considering the interrelationship between agriculture and other industries in the achievement of economic development we must realise that:—

(a) Agriculture is the major occupation in the country and except for a few cottage industries and possibly some light industries, the other industries are practically non-existent;

(b) The economic development of agriculture cannot be separated from agrarian reform and from revolutionary changes in such institutions as the market, credit and state aid to the peasantry. Piecemeal changes and "show-piece" projects are not likely to make any significant impact. In brief, the role of capitalists[23] in agriculture must undergo a complete change; but

(c) There is scope for the entrepreneur to function within the planned development of other industries. Such capitalists should function in a different way and on a different basis from the present capitalists in agriculture;

(d) The allocation of resources for development between agriculture and other industries must be determined by technical considerations and by the phasing and priorities of a national development plan;

(e) Although planners should bear in mind the principle of economy (i.e. that all resources are scarce and have alternative uses), through time economic activities can have cumulative results due to the principle of circular causation;

(f) Finally, it follows that agricultural development is largely a matter for national action. Negative or passive[24] action internationally may also be helpful. On the other hand, there is considerable scope for international action in the supply of the requisites for the development of other industries through loans, grants and "aid facilities".[25] Of course it is difficult to believe that any advanced country is going to spoil its own markets by helping to develop a competitor in a backward country. However, competition between industrialised countries may offset this effect.

23. Including landlords, moneylenders, merchants and speculators.

24. E.g., elimination of tariff barriers or restraint in the advanced countries from subsidising home production of agricultural products that are produced in the backward countries.

25. E.g., training schemes.

# BOOK REVIEWS

N.B. Desai, *Report on the Administrative Survey of the Surat District*, published by the Indian Society of Agricultural Economics, Bombay, 1958. pp. xxv - 336. Rs. 12.

Malayan economists brought up on an imported diet of Keynes *et al* may not be so keen to turn to studies by our fellow Asian colleagues. Perhaps the rather heavy heading of this report may also tend to lead our readers to seek more eye-catching titles.

However, this is a most exciting book for all Malayan readers who are interested in 'development'. Among those to whom I would particularly recommend it are administrative officials at all levels, politicians, and those who serve by sitting on the multifarious committees and other public bodies that a modern government finds indispensable.

The report is a first-hand study of the bureaucratic machine at the district and the kampong level in Surat which is a district in Bombay. There are many observations and recommendations that could be immediately used with considerable benefit to all concerned in Malaya.

Incidentally this is no ivory-tower type of academic research. It was undertaken by the India Society of Agricultural Economics in 1955 on behalf of the Research Programme Committee of the Indian Planning Commission. Those who have studied and visited India will know the authority that the Planning Commission carries.

The report is divided into three parts: (I) a historical review of the district administration from the Moghul period to the present day, (II) a critical examination of administrative procedures at the levels (in terms of Malayan equivalents) of the district officer and the penghulu or lowest village administrative unit, and (III) the institutions and the structure that have evolved as a result of governments' desire to carry out kampong or district development.

There are nine chapters with a large number of sub-headings. Recommendations are included in the general discussion and then in summaries at the end of each part.

Two major topics that are likely to be dear to the heart of every frustrated Malayan District Officer and anguished State Secretary are the problems of 'arrears' and of coordination.

Several official reports in Malaya have already drawn attention to the volume of arrears in the sphere of land administration.

Dr. Desai took several censuses of pending papers at the different levels. "It was for the first time that such an analytical survey of arrears was made. It clearly revealed the position of arrears. A study of these cases would also enable us to find out the causes of delay and suggest remedies. The fact that there are more than 9,000 cases pending for more than one year is hardly any testimony to efficiency, sense of duty and devotion." (p.43). 815 of these cases had been pending for over ten years!

This is about the district level. At the taluka or "mukim" level it was found that out of 998 cases, 59 cases had been pending for periods between 5 and

20 years and 492 cases had been waiting for settlement for periods ranging from 1 to 5 years.

There are many interesting and practical suggestions for remedying such a state of affairs.

Coordination is a problem in every modern state. The problem increases in geometrical progression with federal systems, and the plethora of public corporations that are created to carry out rural development, land development, etc., not to mention the numerous committees all of which appear to have more or less the same personnel.

Each department has to depend to some degree on the cooperation of other departments. "In fact it is the team work of all these departments which alone can ensure prompt and satisfactory results. . . . " (p. 241). All district agencies, official and non-official, must be brought together in a harmonious structure at all levels. Dr. Desai presents us with many practical ideas and suggestions based on modern theories of administrative organization.

There are a host of interesting minor matters that are relevant to Malaya, but two of these deserve special mention, namely, translation and telephones.

In order to help officials at the lowest levels of the hierarchy to understand their work it is strongly recommended that the Central Government translate Government resolutions and circulars into the vernacular language instead of merely making them available in English. This may appear a somewhat cumbersome and expensive way of doing things but from personal observation this reviewer would go further and affirm that only when practically the whole adminstration is carried out in the national language, will the administrative gears intermesh smoothly at all levels.

Most of the Asian countries have been initiated into modern state systems with a strong pro-urban bias, especially in the provision of amenities like hospitals, schools, good roads, and telephones. Recognizing one aspect of this type of neglect this report stresses the real need for the establishment of system of rural telephones. In an appendix Sir Manilal Nanavati (President of the Indian Society of Agricultural Economics) says, "Like roads, buses and the posts and telegraphs, telephones are also means of communication but they are the quickest of them all. If, therefore, the villages are to be brought into intimate contact with the administration and also with the urban areas, the telephone seems to offer the most effective remedy." (p. 261).

The methodology used for this survey appears to be very appropriately chosen. No random sampling techniques and no proformas were used. Perhaps the investigator sensed the instinctive dread a district officer has for 'another questionnaire' that has to be filled up.

Perhaps for the benefit of a wider readership, Indian terms (like taluka and mamlatdar) could be explained in a glossary. Indeed the Malayan Economic Society might set up a study group to prepare such a list with some notes on local equivalents for Indian official titles and procedures to accompany this work in Malaya.

We welcome this excellent report and hope it will have a wide readership in Malaya.

U. A. Aziz,
*University of Malaya.*

J. P. Bhattacharjee (ed.), *Studies in Indian Agricultural Economics*, Bombay: The Indian Society of Agricultural Economics, 1958, 326 pp. Rs. 18

This volume presents recent macro-economic research studies related to some of the major aspects of the national agricultural economy of India. Its preparation and release were timed to coincide with the Tenth Conference of Agricultural Economists held at Mysore in 1958. Accordingly, much of the subject matter focuses on the central theme of the Conference, "Agriculture and its Terms of Trade". As stated in the editor's preface, the intent of the book is to review the changes which have been taking place in India's rural economy and to bring together recent analytical thinking about these changes.

*Studies in Indian Agricultural Economics* contains nine papers especially written by government and university research and planning workers in India. It includes recent studies of agricultural output, prices, marketing, trade, development planning, food consumption, employment and credit along with an examination of the institutional framework of rural India and a review of developments in Indian agricultural economics research.

For a volume so broad in scope, it is impossible to summarize the observations and conclusions of all the authors. This review will attempt to discuss the contents of the book and possible uses by workers in other countries.

The papers in this volume may be briefly outlined as follows:-

1. "Agricultural Output and National Income in India" by Dr. P. J. Mukherjee and Shri S. Siva Subramonjan of the Delhi School of Economics.

   Traces the changes in acreage, yield, and output for individual agricultural commodities in India between 1900 and 1955. Also, the composition and internal interrelationships of the output of the Indian rural economy are examined by studying selected village social accounts. Special emphasis is given to the problems of assembling adequate data and developing measures of aggregate output.

2. "Prices, Trade and Marketing of Agricultural Commodities in India" by Dr. R. N. Poduval and Shri Pravakar Sen of the Directorate of Economics and Statistics, Indian Ministry of Food and Agriculture.

   Focuses attention on the responses of agricultural activity in India to economic incentives by examining historical changes which have taken place in aggregative crop production, terms of trade between agricultural and non-agricultural sectors, amount and composition of foreign trade, and domestic marketing patterns. The effects of price changes on individual farms are also discussed, using data from farm management studies in six regions of India. Finally, actual and proposed government policies related to prices, marketing, and trade are reviewed and assessed in terms of their likely impact on agricultural price structures.

3. "Terms of Trade of Agriculturalists in India with Special Reference to Vidarbha" by Professor P. N. Mathur of the Gokhale Institute of Politics and Economics at Poona.

   Develops indexes of prices paid and received by farmers in recent years (1) for all of India (using aggregative results of various national surveys), and (2) for two districts in Bombay State (using detailed records of farmers' sales and purchases). Special emphasis is given to the problems involved in assembling data and selecting methods for constructing these indexes.

4. "Investment in Agriculture in the Two Plans" by Dr. D. T. Lakdawala, Dr. M. B. Desai, Shri V. S. Vyas, Shri S. H. Deshpande, and Mrs. Tara Shukla.

   Reviews the planned and actual achievements with respect to production and to public and private investment related to the agricultural sectors of India's First and Second Five-Year Plans. The authors compare the emphases given in the two plans to various development activities — technological improvements, cooperation, community development, extension education, irrigation, etc. Disparities between proposed achievement levels and the funds which have been allotted for specific purposes are pointed up.

5. "Trend of Consumption of Food and Foodgrains in India" by Dr. J. P. Bhattacharjee of the Agro-Economic Research Center, Visua-Bharati University.

   Analyzes the overall changes which have taken place in *per capita* foodgrain consumption in India since 1900, using aggregative data. Changes in the composition and level of foodgrain consumption in recent years are treated with special detail. In presenting his analysis, the author points up statistical problems involved in making quantitative estimates of this sort. Finally, the possibilities of forecasting future consumption patterns with the use of historical data are explored.

6. "Employment of Man-Power in Agriculture" by the Directorate of Economics and Statistics of the Indian Ministry of Food and Agriculture and by the Agro-Economic Research Center at Madras University.

   Examines the nature and extent of employment offered by agriculture to India's labor resources. Results of the recent Farm Management Investigations are analyzed in considerable detail to give a picture of the amounts of family labor devoted to farm, off-farm, and non-productive work. The kinds and amounts of work provided by agricultural laborers are analyzed, using data from the Agricultural Labor Enquiry completed in 1950-51.

7. "Rural Credit in India" by Shri V. M. Jakhade of the Reserve Bank of India, Bombay.

   Reviews the existing supply of and demand for rural credit in India, and appraises possible policies for meeting future credit needs. Results of the Rural Credit Survey, conducted by the Reserve Bank of India in 1951-52, are used to estimate the extent and purposes of borrowing by rural families, the sources of credit used, and repayment burdens. The past and existing government, cooperative, and private credit facilities are reviewed and suggestions are made for future credit programs in India.

8. "India's Rural Economy and its Institutional Framework: A Re-examination" by Shri Tarlok Singh of the Planning Commission at New Delhi.

   Using a non-statistical approach, this article examines the impact of institutional changes in rural economic development and critically evaluates some of the changes which have been taking place under India's existing Development Plans. The possible roles of existing village community structures, land tenure adjustments, and cooperation in future rural development programs are discussed.

9. "Progress in Research in Agricultural Economics in India" by Professor M. L. Dantwala of the University of Bombay.

   Traces the historial development of research related to agricultural economics in India since the early part of the 19th century, noting particularly the kinds of problems studied, the groups conducting research, and the methodology used. The author reviews major research activities now in progress or being planned and points up future problems likely to confront agricultural economics workers (the need for more research to guide government planning, the lack of trained personnel, the need for more basic statistical data, etc.).

In presenting this book Dr. Bhattacharjee has very effectively assembled a good cross-section of current thinking by Indian agricultural economists on macro-economic problems of Indian agriculture. It is apparent that much thought and work has gone into the preparation of each paper.

While the contents are oriented to the situation in India, *Studies in Indian Agricultural Economics* should be of interest to workers in other countries also. Those not well acquainted with Indian agriculture (such as the present reviewer) will find in some sections a wealth of statistical material describing and interpreting recent changes taking place in agricultural output, prices, production and consumption patterns, employment, and finance. Other sections will help to bring the reader up to date on some of India's recent rural development and credit programs, and their levels of accomplishments.

Public administrators dealing with similar rural economic problems in other parts of Asia may find this book useful in suggesting and appraising possible courses of action in their own countries. For, rather than merely collecting a multitude of historical data, the writers of these papers have attempted to interpret what effects long-run changes in prices, output, population, etc. have had on Indian agriculture. Similarly, instead of "playing up" the success which has been achieved, the writers have made a real attempt to evaluate critically several aspects of rural development programs and to point up some administrative and institutional obstacles which have been encountered.

The student and professional economist will find much material of methodological interest. Several papers devote considerable attention to data and developing indexes and other measures of income, production, and price changes. The first paper ("Agricultural Output and National Income in India"), third paper ("Terms of Trade of Agriculturalists in India"), and fifth paper ("Trend of Consumption and Foodgrains in India") may be particularly useful in this respect. Sections of these papers might well be used in teaching as clearly written examples of some possible methods for studying macro-economic problems. Similarly, agricultural economists in government research or action agencies may find many helpful ideas for handling their own data collection and analysis problems.

The final paper, "Progress in Research in Agricultural Economics in India", gives a bird's-eye view of the historical developments which have taken place in agricultural economics research in India. The reviewer found this paper helped a lot to see how the studies reported in earlier parts of the volume fit into the overall picture. The reader who is especially interested in research methodology may find it worthwhile to read this final paper before tackling the earlier papers devoted to actual results of individual studies.

In several of the papers, attention is centered on a single study related to a particular macro-economic problem. Frequently the steps involved in analysis and the statistical results are shown in great detail. This reviewer found himself sometimes wishing that less statistical and descriptive detail had been presented and that, instead, more attention had been given to synthesizing the findings of various pieces of research related to a particular problem. This might have provided readers with a broader understanding of the approaches which have been used by Indian agricultural economists. Since parts of some papers draw on the same studies, there is occasional overlapping in subjects covered and data presented from paper to paper. But, despite these possible weaknesses, an admirable job has been done of presenting these papers, especially when one considers the relatively short time available for preparing the book.

All in all, *Studies in Indian Agricultural Economics* represents a big step forward in bringing together recent analytical thinking concerning macro-economic problems in Indian agriculture. It well deserves the attention of students, research workers, and administrators in other countries as well as in India.

D. W. Brown,
*University of Malaya.*

# PROCEEDINGS
of the
# SYMPOSIUM ON AGRICULTURAL ECONOMICS
held at
# THE UNIVERSITY OF MALAYA IN SINGAPORE
September 18—20, 1958

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## FOREWORD

By Lim Tay Boh
*Dean of Arts, University of Malaya*
*President, Malayan Economic Society*

The papers and discussions published in this section represent a full record of the proceedings of the Symposium on Agricultural Economics, held in the latter part of September at the University of Malaya in Singapore. The Symposium, organised jointly by the Malayan Economic Society and the Department of Economics of the University, was first discussed early in 1958 during a visit, to the University of Malaya, of Dr. Clifton R. Wharton, Jr., then Executive Associate of the Council on Economic and Cultural Affairs, Inc., New York.

The idea was to take advantage of the presence of leading agricultural economists at the Tenth International Conference of Agricultural Economists at Mysore, India, to establish contact between some of the visiting experts and Malayan economists and administrators who are actively concerned with the problems of agricultural economics. It was thought that through the exchange of experiences and discussions of common problems the visiting experts and the local economists and administrators might have a much better appreciation of the need and scope for coordinating research in the field of agricultural economics.

The Symposium was made practicable by the generosity of the Council on Economic and Cultural Affairs, which paid the expenses of the visiting experts as well as the cost of organising the Symposium.

The participants of the Symposium included, besides the visiting experts, representatives of the Government of the Federation of Malaya and of Singapore, members of the Malayan Economic Society, the academic staff of the Department of Economics, the Committee members of the University of Malaya Economics Society, and the Honours, Third and Second Year Economics students of the University.

Papers were read by the following visiting experts:-

Prof. H. von Oppenfeld — Visiting Professor at the University of the Philippines,

Prof. C. V. Plath — Visiting Professor at Kasetsart University, Bangkok,

Prof. D. Gale Johnson of the University of Chicago,

Prof. George L. Mehren, Director of the Giannini Foundation at the University of California.

The following also gave reports on agricultural economic research in Southest Asia:-

Prof. H. von Oppenfeld (Philippines),

Prof. C. V. Plath (Thailand),

Dr. Udhit Narkswasdi (Thailand),

Dr. J. B. Hendry (Vietnam),

Ungku Abdul Aziz (Malaya).

The planning of the Symposium was undertaken by a subcommittee consisting of representatives of the Malayan Economic Society and of the Department of Economics. Prof. T. H. Silcock, Head of the Department of Economics, was the Chairman of this Planning Committee, and the other members were Dr. Lim Tay Boh (President of the Malayan Economic Society), Dr. You Poh Seng (Editor of the Malayan Economic Review), Mr. Yip Yat Hoong (Assistant Editor of the Malayan Economic Review) and Mr. T. Balasundram (Hon. Assistant Secretary of the Malayan Economic Society).

The arduous task of executing the decisions of the Planning Sub-Committee was carried out by Dr. You Poh Seng and his team of cheerful helpers, including Messrs. T. Balasundram, Yip Yat Hoong and the Honours Economics students.

Thanks to the cooperation and keen interest of all the participants, the Symposium was a great success, and provided a most stimulating experience.

Finally, I have great pleasure in expressing on behalf of the Planning Sub-Committee, my appreciation of the valuable help of Mr. Wee Yan Soon, Administrative Assistant to the Dean of Arts, in recording and transcribing the proceedings.

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# SOME INTERNAL CAUSES OF RURAL POVERTY IN THE PHILIPPINES

By H. Von Oppenfeld

*Visiting Professor at the University of the Philippines*

It is indeed a privilege to discuss with you some problems in your neighbor country: the Philippines. My perspective, of course, is that of a foreigner; I have the opportunity to work with the Filipinos at one of the finest agricultural colleges in the Far East: The College of Agriculture, a unit of the U.P. My observations are down-to-earth, substantiated through simple farm management analysis. They include an attempt to understand the institutional framework which influences decision making and actions of Filipino farmers.

The Philippine archipelago, consisting of approximately 7,000 islands, has a population of 22 million. Sixty-one per cent. of the active labor force is engaged in farming or fishing;[1] agriculture contributes 42 per cent. to the Gross National Product.

A visitor, arriving in Manila by boat or plane, will soon observe some striking contrasts. Manila has many features of a modern city. A network of the Philippine Airlines, through efficient service, connects all major and many minor islands. Inter-island shipping is fairly well developed. Some of the main highways live up to American standards in quality. Large or small buses reach most communities accessible through roads. Manila and her suburbs witness rapid industrial development.

Leaving Manila, still proceeding on smooth concrete roads, the visitor gets his first view of rural life and farming methods. Houses provide just a minimum of space. Constructed of bamboo and Nipa palm materials, they are easily destroyed or damaged by typhoons. Women launder in rivers; many houses get water from shallow open wells or streams. Farmers carry bundles of grain, thresh by flail or by foot, rolling rice panicles on a hard surface. Farming methods are crude and inefficient. The visitor wonders if the modern age, so conspicuous in Manila and suburbs, has by-passed those who make their living in farming.

My observations are largely based on a survey of 5,200 farms. Our research staff consisted of 35 undergraduate students majoring in agricultural economics. After an initial training period, they surveyed farms in their home province. Each student analyzed these data for an undergraduate thesis. For better coverage additional records were taken by a few staff members. All field data were summarized and analyzed by the staff of the Department of Agricultural Economics.[2]

Farms are small, averaging only 2.4 cropland hectares. Nearly two-thirds have less than $100 of cash farm income,[3] less than $50 of annual cash farm expenses. Of 3,800 farmers growing rice as their principal crop, 53 per cent.

1. The Statistical Reporter, Vol. 1, Jan., 1957, No. 1, p. 34.

2. H. and J. von Oppenfeld, P. R. Sandoval, Sta. Inglesia, "Farm Management, Land Use and Tenancy in the Philippines," Central Experiment Station Bulletin 1, 1957.

3. All dollor references in this paper are in U.S. currency — Editor.

have no marketable rice surplus. They produce for home use and for shares: shares to the landlord and to farm laborers.

The typical farmer's household has a potential labor force of 28 months. Only one-third of this goes into productive farm labor inputs. Yet the farmer spends a substantial amount in cash or in kind for hired or exchange labor. This dependence upon outside labor can, to some extent, be justified by highly seasonal labor requirements and by the need for timeliness in planting, cultivating and harvesting of rice. Rational farm management would, however, result in a better labor distribution, give more productive labor to underemployed household members and eliminate expenses for hired labor. Such a shift in resource use is one way to lift the level of family farm income.

Another cause of low income is the shortage of operating capital. A simple listing of the assets shows the typical structure of farm capital. Land values are high, averaging $3,000 per hectare of rice land or about $600 per acre. Land alone accounts for 88 per cent., the dwelling for another 5 per cent. of the farm capital. Work animals, semi-fixed assets, make up 4 per cent. Only three per cent. remains for current assets or true operating capital.

Standard equipment items are plow and harrow as field implements, hoe, rake, bolo and harvest knives as hand tools, a sled, seldom a cart, for farm transportation. These crude and inefficient tools average less than $50 per farm. Investment in productive livestock is equally low.

On tenant farms the lack of implements is frequently attributed to scarcity of capital. But in our study full owners show little or no tendency to increase the margin of operating capital for equipment and productive livestock, on farms equal in size to tenant farms. Apparently their savings are channeled into more land ownership. There is obviously little use for tractors and tractor implements on the typical small farm; but better hand-tools and animal-drawn implements would enhance efficiency and timeliness of labor, as demonstrated on even smaller farms in Japan and Taiwan.

Many problems are inherent in the high rate of tenancy, 37 per cent. according to the 1948 Census of Agriculture. In the older farming regions the proportion rises above two-thirds. Most Filipino tenants are share-croppers.

In rice farming the landlord commonly supplies the land and contributes to the cost of seeds, harvesting and threshing. Sometimes he pays part of the planting, fertilizing and other cash expenses. The tenant furnishes work animals, tools and man labor. Frequently he depends upon the landlord for loans to finance not only farm expenses but subsistence needs. After setting aside portions for seed, production expenses and harvest workers, the harvest is commonly divided between landlord and tenant at a 50:50 ratio. The tenant's small share is often mortgaged to his creditor. Soon after harvest he must borrow again, in anticipation of a new crop.

This vicious cycle has long been recognized. The Agricultural Tenancy Act of 1954 defines the rights and obligations of both landlord and tenant. The law stipulates a sharing ratio of 30:70 between landlord and tenant when the tenant furnishes all inputs other than the land.

Several studies show that the present tenancy law has little impact. The prevailing sharing ratio is still 50:50. Competition among tenants may enable the landlord to dictate the terms of contract. Population increase is likely to aggrevate this condition. There is also evidence that the tenant prefers the 50:50

sharing as long as the landlord continues the paternal function of advancing credit for farm inputs, subsistence, and even social expenses. The tenant avoids the responsibilities of an independent operator who owes the landlord nothing but the land rent.

Under these circumstances, leasehold tenancy would be a reasonable target. Combined with an effective farm credit system, it would promote the tenant on the agricultural ladder. It would help distinguish land rental from other contributions, such as credit. If through his efforts and improved practices the tenant would realise higher yields, the land rental would remain the same. The increment resulting from good practices would go to the tenant. Under the present 50:50 sharing, the tenant has little incentive to work harder and to engage in the risk inherent in new practices.

The operator's net crop share is subject to another sizeable reduction. When rice is ready for harvest, a large group of neighbors is engaged as harvest workers. The harvesters receive a share, normally at least one-sixth of the rice crop. Harvesting rice is hard work, but the harvesters' returns per day are several times higher than the farmer's daily labor earnings.

The communal method of harvesting is practised by all operators, large and small, owners and tenants alike. With better planning, a farmer can spread the harvest over a longer period. He can stagger his rice plantings, plant early and late maturing varieties. Harvesting with family labor, an owner operator can increase his take-home share by 15 per cent., a tenant by 30 per cent., earning also that portion of the harvesters' share which the harvesters receive from the landlord.

The opportunity for maximizing family farm labor earnings seems obvious, but it is difficult to change the social institution of communal harvest. In the survey we found only one geographic region where farmers harvest without the help of outside labor.

Even in coconut farming, where timeliness of harvest is much less critical, two-thirds of the tenants rely on contract harvesting. This reduces their functions to "cleaning and guarding the grove", hardly a full-time job on a 3-hectare farm. As a result, their crop share is only 19 per cent., whereas self-harvesting tenants receive 41 per cent. Some of the unused labor capacity could well be employed in harvesting and husking coconuts. Such practice, according to our records, more than doubles coconut tenants' farm labor earnings.

In the farm business analysis, cross-tabulation was mainly used, sometimes for all 5,200 farms, sometimes within a type of farming. The following factors and conditions were found to effect farm income: (1) farm size, (2) geographical location, (3) type of farming, (4) labor efficiency — on rice farms, (5) land use intensity, (6) tenure and (7) the operator's educational attainment.

Under a system of near-subsistence farming two measures of farm income were found most meaningful: (1) Operator's Farm Labor Earnings and (2) Family Farm Labor Earnings.

The first, operator's farm labor earnings, is obtained by adding the value of farm privileges to labor income. This is essential where food and shelter are a large share of family returns from farming. Operator's farm labor earnings for 5,200 farmers averaged $111.

The second measure, family farm labor earnings, differs only in one respect. Unpaid family farm labor is not charged as an expense. This measure then represents returns from farming to all members of the family, including the

operator. The average of $185 is equivalent to a *per capita* farm income of $32 for members of the household.

This study of 5,200 farms did not provide a bright picture of Philippine agriculture. However, the farm income situation is not as bleak as the averages suggest. Considerable variation in income was found between types of farming and between geographic regions. Farmers are gradually shifting to commercial farming. The growing pains include all the familiar symptoms of a shift from subsistence farming and living to a money economy, from a routine cropping pattern to a conscious choice between alternatives in resource use.

Farmers can more and more look to their own College for research and technological advances applicable on their farms. Research grants from Filipino and outside sources have strengthened the research arm of the College. Staff members are gaining competence through training and experience, at home and abroad. Techniques such as insect and disease control developed elsewhere are easily adapted and adopted here. Irrigation facilities are being expanded. Improved varieties of rice, corn, coffee and other crops are being distributed through a certified seed program. Government extension workers are being trained to help farmers in applying new techniques. A liberal farm credit system is geared to enable farmers to purchase farm inputs requiring cash outlay.

When then is the acceptance and application of practices, tested and recommended by College and government workers, so slow? In our contact with farmers and extension workers we are now studying why farmers are so reluctant to accept change. Some conditions are well known; they have been observed in other developing economies. Others may be specific to the Philippines, inherent in the institutional framework of the country. The following list is not meant to be all-inclusive. It is merely a sample of physical, sociological and cultural aspects with economic implications.

## PHYSICAL CONDITIONS BLOCKING CHANGE

1. Weeding practices. Weeding is an absolute necessity in European or U.S. agriculture. Weedy crops are synonymous with poor growing practices. Though he may not succeed, every Western farmer tries to grow a clean crop. In the Philippines farmers tell us they must let the weeds grow tall; their animals depend on them for feed. Frequently, this practice accounts for the low yield from the main crop.

2. Experience with commercial fertilizer. Experiments conducted by the Soils Department of our College show no consistent response to phosphorus and potash. Response to nitrogen was significant in only 65 per cent. of a large number of replicated tests on lowland rice. Most rice varieties lack the stiff characteristic. Also, farmers fail to change their spacing practices. As a result the rice may lodge. Thus fertilizers may reduce rather than increase yield.

In recent years, government programs have supplied farmers with subsidized fertilizer. It was hoped that this free or low-price offer would show farmers the potential benefit of fertilizer and that in subsequent years farmers would procure fertilizer through trade channels at normal prices. Instead, farmers waited for other give-away programs. Also, the distribution through government channels disrupted the procurement pattern through the normal trade channels and caused shortages and black market operation.

3. Unfavorable experience with changes in individual farms. An individual farmer finds it hard to change his production practices. If he is out of step with the production pattern of his neighbors — through early planting or through choice of early maturing varieties — his rice is subject to severe

damage by insects, rats and rice birds. All pests prey on his crop. Change must therefore come through community action.

4. Livestock keeping practices. Improved livestock practices, particularly in respect of swine and poultry, are more easily adaptable from Western agriculture than cropping practices. In this some Filipino operators have had remarkable success. Progeny of imported animals respond well to good management and are much more productive than native breeds. Yet, according to our records, the average farmer's return from livestock enterprises is negligible as long as he adheres to the scavenger type of poultry and swine management. Any advantage from better blood lines is soon dissipated by insects and diseases to which the native animals may be immune. Confinement and isolation from the neighbor's animals is an absolute requirement of good management. Many projects have failed because this factor was neglected.

## ECONOMIC DETERRENTS TO CHANGE

1. Lack of adequate farm credit. The shift from subsistence farming to commercial agriculture involves the adoption of many new techniques:- certified seed fertilizer, pesticides, sprayers, dusters, etc. Each of these requires cash outlay. By definition a subsistence farmer has few cash sales. He cannot meet the cash requirements unless he is supplied with liberal farm credit. This problem is most serious for the tenant operator. He lacks the security required as collateral by most credit agencies.

2. Unfavorable crop sharing system. The prevailing sharing system in the Philippines is 50:50. The tenant operator must work harder and undergo new risks with any change from the old cropping pattern. If his improved practice brings about an increment in yield the landlord will receive an equal share of the increment. In cases where the landlord does not share the added inputs, the tenant has little incentive to work for better yields.

3. Adherence to subsistence economy. Our work with individual farmers through farm management extension gave us a revealing insight. In an upland rice area yield and return per man-day and per hectare were many times as high from small vegetable and fruit enterprises as from the main crop, upland rice. Yet farmers spurned our advice to expand the profitable enterprises and refused to reduced the area in upland rice. They consider it bad to purchase rice, their main staple. The age-old subsistence philosophy may be a stronger factor than income motivation. This is a deterrent to rational farm planning.

## INSTITUTIONAL FACTORS WITH ECONOMIC IMPLICATION

1. Communal working habits. Planting rice, for instance, has two aspects, getting the job done and after that the social part. With food, drinks, smoking, etc. the latter becomes a social event, a feast. All must proceed according to a long established pattern. Changes in the method of planting, spacing or timing of the operations are just as difficult to introduce as deviations from customary organization of the working party. This is one of the more intangible deterrents to change.

2. Spending patterns. Filipino consumption habits are also determined by social pressure from the neighbors. A reduction of expenses for social events, baptismal, wedding, funeral or fiesta parties, in favor of investment leading to farm improvements, is nearly unthinkable. Anthropologists tell us that no Filipino farmer wants to acquire the reputation of being "stingy".[4]

4. C. R. Kant, "Agricultural Innovations: Attitude and Reality in Philippine Food Production," University of Chicago, Philippine Studies Program, Unpublished article.

3. Family ties. Another important factor in a Philippine community is the pressure of an obligation felt by a person to help relatives who have less than he has. Because of this, any sort of excess is soon transferred to a needy relative. Excess will attract such persons. Refusal to give would again lead to a reputation of being "stingy". This is about the worst stigma a person can acquire. The family ties in rural communities are strong. They provide a built-in social security system for all members of the kinship group. This concept of sharing is not conducive to maximizing farm incomes. It explains why many farm operators work hard until they reach a certain minimum income. Beyond that, the opportunity to earn more is no longer a strong motivating factor. Most American and Western farmers are different in this respect.

With these communal attitudes preventing change and encouraging the continuance of subsistence agriculture one might query why spend time and effort to promote rational farm management? Why not leave the farmer undisturbed to enjoy his customary way of life?

First, the farmer, perhaps unconsciously, is affected by the modernization of the Filipino economy. He and his family are becoming aware of modern goods and services; they are not content to keep to old consumption patterns.

Second, the population is increasing and industrialization is creating larger groups which must be fed by the rest who remain in agriculture. To meet the increasing needs of the urban population, agricultural production must be expanded.

Third, nearly two-thirds of the working population is engaged in farming; too many farmers are producing too little food. How can the standard of living be raised materially, unless farm labor productivity is lifted?

Research shows tremendous scope for raising productivity through adoption of improved techniques and through rational farm management. The process involves a shift from subsistence to commercial farming. Economists can help in speeding up the process and in lessening the growing pains.

## DISCUSSION ON PROFESSOR OPPENFELD'S PAPER

*Mr. Koh Watt Seng*: We have heard some very interesting comments by Professor Oppenfeld on the internal causes of rural poverty in the Philippines. It appears to me that the problems which encounter farmers in any economy in the world are much the same.

The first point I would like to comment upon is that, while a typical farmer's household has a potential labour force of 28 months, only one-third of this goes into productive labour on the farm. It is our experience in Malaya, and I think it is also the experience of other farming economies of Southeast Asia, that family labour is used on the farm. Women and even children go into productive efforts on the farm itself. Women help, though they may not be fully employed. Thus we find women helping to dig the beds in the vegetable farms, and in the rice fields of Northern Malaya they help in ploughing and in harvesting the fields.

Children above say 10 years of age also help in some small way, such as taking the buffalo into the field, looking after it and preventing it from going astray, or feeding chickens in the backyard. This certainly should be considered productive farm labour; if it is not full employment, it is at least some form of employment on the farm.

With regard to the finding that of the potential labour force of the typical farmer's household, only one-third goes into productive farm labour, it would be interesting to discover what happens to the other two-thirds. It may be that

some farmers' children, after having had an education at the village school, drift off into urban areas to find possibly more lucrative employment there. I wonder whether this complete refrain from farm labour does not lead to an underestimation of the females and of those children who stay behind on the farms.

Another interesting point concerns the sharing of crops. Where sharecropping prevails the harvest, after putting aside portions for seed, production expenses and payments to harvest workers, is divided on a ratio of 50:50 between the tenant and the landlord. In Malaya the ratio is more likely to be 70 to the landlord and 30 to the farmer.

Professor Oppenfeld then goes on to say that the tenant's share is often mortgaged to his creditor. Students in agricultural economics in Malaya will no doubt be aware of the similar problem in this country; the lender here is usually the village retailer. However, Professor Oppenfeld has glossed over this problem in one sentence, and thus gives us the impression that the problem is not prevalent in the Philippines. It would be interesting to know if this impression is in fact correct.

In the Philippines the landlord has the paternal function of advancing credit for farm inputs, such as the cost of seeds, harvesting and threshing, and sometimes part of the planting, fertilizing and other cash expenses. In Malaya the landlord does not always perform this function; for the use of his land he receives as high as 70% of the harvest. The farmer on the other hand has to borrow for his farm inputs from the village retailer. When you remember that he gets a share as low as 30% of the harvest and has to repay his creditor for farm inputs, you will readily see that his burden is much heavier than his counterpart in the Philippines.

In many cases the farmer's small share of the harvest is insufficent to settle his outstanding debts. Hardly is the harvest over when the farmer finds himself with part of his old debt unsettled, having to depend for bare living for himself and his family by borrowing from the village retailer, and with little or no hope of ever clearing up his chronic indebtedness. Such is the lot and the tragedy of many of the farmers in Malaya today.

With regard to the farmers' reluctance to change, Professor Oppenfeld has brought up several reasons, physical, economic and institutional. However there is one point which I think ought to be stressed in most Asian countries, that is, the relationship between the government and the farmers. Partly as a result of past experience, and partly as a result of ignorance, many farmers have developed a suspicious attitude towards any government representative who might be visiting the farms in connection with projects which are aimed to help the farmers improve productivity and raise their standards of living. In fact this attitude is extended to most strangers and has been experienced by several University students who have had the opportunity of going into farm regions to carry out surveys. To get over this difficulty, the government must show a sincere desire to help, and the farmers must be enlightened as to the government's desire and as to the fact that a visit by a government representative does not necessarily imply any sinister intention, such as driving the farmers from their farms or raising their rent.

Coming now to some of the conditions blocking change in the Philippines, first of all the physical aspect. Here I would just like to touch on the problem of weeding, namely, that the farmers usually let their weeds grow since their cattle need the weeds for feed. Surely this is the effect of the land shortage prevalent in many parts of Southeast Asia. On many of the farms in the Federation of Malaya and in Singapore, every bit of the available land is cultivated even down to the ditches. The problem is therefore really one of making more land available or cultivable.

In connection with institutional factors, Professor Oppenfeld mentions that the feast after harvest is undesirable and a waste of the farmer's income. I think this kind of feasting has a certain religious background, in the same way as the Jews with their Passover and the Americans with their Thanksgiving; and it will continue. Our aim should surely be to increase productivity elsewhere and not abandon these social functions; at best it might be possible to suggest that they cut down somewhat on what they spend on these occasions.

Almost the same can be said on the matter of spending patterns. We all know that the fear of social disgrace is very strong nearly everywhere, but that in the case of the poor farmers it might well lead to excessive spending on special occasions; in Malaya it is not unknown for a farmer to sell his land to provide a big feast on the occasion of his daughter's wedding. The only solution one can suggest is to educate the people towards a more rational habit of spending.

The last point I want to mention is the matter of family ties, which Professor Oppenfeld describes as providing a built-in social security system for members of the kinship group, and which he attributes as an institutional factor not conducive to maximising farm incomes. I think however that this is one of the most admirable aspects of poverty, that people are prepared to lend a helping hand to another relative in need. This phenomenon is probably found in all agricultural economies of the world, whether it be in Southeast Asia or even in America, and tends to be less strong among urban industrial population. I am not sure that I entirely agree with Professor Oppenfeld's implication that farmers should strive for economic improvement at all costs, even at the expense of dropping humanism along the way.

## QUESTIONS AND ANSWERS ON PROFESSOR OPPENFELD'S TALK

*Mr. Wong Pui Nam*: I am curious to know why Prof. Oppenfeld has not said anything about the transport problems in the Philippine farms.

*Professor Oppenfeld*: You are quite right that I have not mentioned transport problems in the Philippines farms. Transport is involved in two ways. First in transporting produce from the field to the farmstead and second in transporting the produce from the farmstead to the city markets.

In the Philippines most farmers make use of very crude transport facilities. Many farmers have a sledge which is pulled by their work animals and of course this is a very slow and rather inefficient method of transporting. Only those farmers whose fields are located on good roads can use either horse-drawn carts or sometimes the small 'buses' which are perhaps unique in the Philippines. These are jeeps which were left behind in the Philippines after the war. Rather ingeniously the Filipinos have coverted thousands and thousands of these jeeps into small buses with a capacity normally for 10 people. I have seen 20 on one. Wherever farm fields or farmsteads are accessible by roads, these jeeps are used a great deal for transportation.

There is also one means of transportation which should be given much more attention in the Philippines and that is inter-island shipping. Our observations are that prices from island to island vary greatly. This is because the shipping rates or freight rates of inter-island shipping are very high.

Thus not all is rosy in transportation and I am convinced that improving all means of transportation including the road system is a very important step in the development of the country.

*Ungku Aziz*: You mentioned that some of the coconut tenants get only 19 per cent of their crop share whereas self-harvesting tenants receive 41 per cent. What do these people do in their spare time if they are not specifically engaged in other things?

*Professor Oppenfeld*: Some are farmers in another occupation. Perhaps they have a rice field somewhere else where they can at least produce their main staple. In certain areas these coconut farmers practise inter-cropping and you can see this from their higher incomes reflected in better housing and so forth. They raise either rice, corns and maize or vegetables, and sometimes fruit in between the coconut farms; they are allowed to do this in all except tree crops. The coconut tenant can normally keep the entire produce of this inter-cropping. But this is practised only in relatively small areas and I would say perhaps in 10% of all coconut farms only. Of course he usually has a few fruit trees, a little rice patch perhaps, but nothing else.

*Mr. Oh Sui Hong*: You have just said that the surplus labour in the coconut farms is sometimes utilized in other agricultural operations such as the growing of rice.

Could not this surplus labour be employed more profitably, even within the farming of coconut itself, by contracting each other's labour during the harvesting period?

*Professor Oppenfeld*: I am quite sure there is a great deal in what you say. The same argument applies in the case of communal rice harvesting and in many other communal working patterns. But I am looking at the problem from the standpoint of farm management where the main consideration is the maximisation of individual farm incomes, or returns from farming to the operator and his family from the individual farm units. I cannot therefore recognise your argument that somehow or other people can get a maximum income out of concentrating on, say, coconut alone in the manner you suggested.

*Mr. Gamba*: The question I would like to raise is the system of rural credit in operation in the Philippines. We have a very serious problem here.

How is this problem solved in the Philippines?

*Professor Oppenfeld*: After having travelled in some of the countries here, I have come to the conclusion that the farm credit problem has been tackled in a rather active and progressive manner in the Philippines. Therefore, I am spending a few minutes to tell you what has been done.

There are four different government agencies giving in one way or another credit to farmers. First there is the Rehabilitation Finance Commission (RFC), which provides credit primarily to large farms, plantations and also to small farmers who want to establish certain specific farm enterprises like fruit orchards, coconut groves, etc. This would involve long term investments and the RFC is the Agency that supplies the credit to these farms.

The second agency is the Philippines National Bank. This agency supplies credit mostly to sugar planters and I must say that it supplies farm credit on a very liberal term and in sufficient amount, and sugar planters have been able with the use of this credit to improve their methods of farming and to make large investments, with the result that their operation is rather efficient.

The third agency, called the Rural Bank Administration, is a unit under the administration of the Central Bank of the Philippines. The Rural Bank Administration supplies credit over a wider field and at the same time encourages citizens in rural communities — people who have funds of their own — to invest these funds in their own bank. Suppose a group of private investors, say 5, 6, 10 or 12 of them, have decided they want to establish a rural bank. They will first have to meet certain requirements. The Government will then, through the Central Bank, invest in this rural abnk by matching private investment by an equivalent amount.

One of the functions of a rural bank is to extend credit to small farmers with some security requirement. In general, it will favour a farmer who owns his land, but if there is tenant farmer who is well known and is a reliable person, then all he needs is a good recommendation from a senior member of the bank and he can obtain credit.

Perhaps the unique thing about this Rural Bank Adminsttration is that it mobilises government capital as well as private capital; it encourages small businessmen and perhaps farmers to open up savings accounts with this Rural Bank. So in two ways this Rural Bank operation is mobilising considerable rural credit by using government money.

The fourth agency is the Agricultural Credit and Cooperative Financing Administration (the ACCFA). This operates at the national level and is primarily sponsored by the government. But at the lower level this ACCFA has local units in the country called the Farmers' Cooperative Marketing Associations (the FaCoMa). The FaCoMa engages in many activities such as extending credit on a cooperative basis and at reasonable rates of interest to small farmers who are members.

There are about 500 FaCoMa's covering a fair proportion of the tenant- and owner-operated farms in the Philippines.

In general the administration is well-organised and they constituate really one of the best hopes for the small farmer. There are however difficulties which have to be solved if the FaCoMa's are to perform their functions satisfactorily. In some cases the management is in the hands of men who are not properly trained, inexperienced or unreliable; in some other cases a farmer may have been granted more credit than he could manage to pay back in time or at all. The result is that he may be blacklisted and may not obtain any more loan from the FaCoMa.

Apart from these difficulties there may be cases of farmers who are members of a FaCoMa and who borrow from their FaCoMa to relend to their tenants who are not members at 50 or even 100% interest. The solution here would obviously be to stop extending credit to farmers for the purpose of profiteering, but in practice how is one to distinguish between borrowing for profiteering and borrowing for genuine production needs?

Finally, what about extending credit for social needs? I do not think that any agency of the kind with which we are concerned can indulge in granting credit according to communal needs. I have talked to several people about this in India, and some of them are of the opinion that a kind of village mutual-aid pool might be the solution; each farmer will contribute a certain sum into this pool at regular intervals, and out of this pool credit will then be given for social functions. I am inclined to this view myself.

*Mr. Gamba*: In the case of poor farmers, what is the reckoning on interest and the terms of repayment?

*Professor Oppenfeld*: We have made studies on this matter, but we find it exceedingly difficult to obtain reliable information. In the case of some tenant-farmers, for instance, the landlord advances the credit for which he charges no interest, but he does receive 50% share of the crop at harvest. This share could therefore be taken to include a certain element of interest on the credit advanced, but the calculation of the interest rate for this is obviously difficult (if not impossible).

Then there are cases where the calculation of the interest rate appears straightforward, but is in fact rather complicated. Thus a rice farmer may obtain a credit of say two units of rice padi at planting time and return three at harvest. The apparent rate of 50% is actually complicated when we consider that at planting time rice is scarce and price is therefore high, while at harvest time price is generally lower.

In our study we have eliminated all cases where the information is doubtful in the calculation of the interest rate. In 1955 we found the interest charged by the landlord averaged about 50%, which is much lower than in some other countries. At that time the two credit agencies I mentioned had just been established, namely ACCFA in 1953 and the Rural Bank Administration in 1954. I am sure that by now the interest rate of private moneylenders must have come down somewhat.

Government agencies charge about 12% interest, and in India I understand that only 7% is being charged in some of the projects. I don't think they are very much interested in interest rates in this neighbourhood because usually rice farmers will need this credit for about 5 to 6 months or half the year.

*Ungku Aziz*: I think Professor Oppenfeld's paper and some of the comments have certain very interesting sociological implications.

Farmers in various countries in this region form basically a type of society characterised by cooperation of one form or another as exemplified by their joint planting of rice, joint harvesting, and the like. Life is on a village basis rather than on an individual basis.

Now when economists trained in the West introduce their farm management techniques to these farmers, they are in effect destroying the village way of life and substituting for it a way of life founded on individualism. At the same time we talk about economic development, about community development and about cooperation.

Now my point is this: in the case of members of a society which is basically cooperative in nature, why should we teach them to give up their cooperative way of life and adopt a way of life based on individualism and capitalism in order that they can ultimately be ready for cooperation? Perhaps in such countries as Scandinavia, Great Britain and New Zealand it was necessary to pass through the various phases from feudalism to capitalism and thence to cooperation. But is it neecssary for communities such as the Malays to go through what is in effect a circular evolution?

I think this is an important matter. It is perhaps more psychological and sociological, but fundamentally it must be realised by economists who are generally interested in promoting better living conditions amongst the communities in this region.

*Professor Oppenfeld*: I would like to say that Ungku Aziz has stated the problem very ably and we can all think about it. I have been thinking about this for a long time and have to think about it a great deal more.

*R. Navaratnam*: Prof: Oppenfeld has said how important it is here in the regions in Southeast Asia that rural development would have to be based on the village economy and not on the individual. He has also said that the cooperative development initiated in India has greatly helped to increase productivity, e.g. in processing and milling of rice, transporting and marketing. In this area the smallholder is exploited to a very great extent by the lack of facilities offered by the Government and by the lack of a good market for his products. Prof. Oppenfeld has not said much about this, namely, to what extent has the government been successful in the cooperative movement in the Philippines?

*Professor Oppenfeld*: I agree that what you have said is very logical and I would invite any one of you who has the opportunity to go to the Philippines to see what has been done there. As I said, ACCFA has established about 500 local FaCoMas which have reached a fairly large number of farmers. The FaCoMas are also engaged in marketing and in processing all the rice and the warehousing of rice. This would have a great effect on prices and tends to eliminate to a large extent any seasonal fluctuation in the prices of rice throughout the area. And so to this extent the cooperative movement has been quite successful.

However there are problems which have not yet been solved. The facilities are very adequate, but they are not fully utilised; for example, the warehouses are sometimes only filled to a-quarter of capacity. Some rice mills have a large capacity and are very busy perhaps for only one month or six weeks. The farmers are really not contributing very much towards maintaining or improving such facilities by making them economically sound and paying; I understand that there is some difficulty like this with the Government operating the rubber factory here in Malaya.

To what extent have they succeeded in increasing production? Here I must say that unfortunately the statistics will not show any marked improvement in productivity. May be it is much too early to look for any improvement yet. May be it will show up in 10 years' time. Up to date the organisation is four years old.

*Mr. Koh Watt Seng*: I wonder if Professor Oppenfeld would outline for us the salient features of the Agricultural Tenancy Act. How is it designed for the betterment of the farmers?

*Professor Oppenfeld*: The Agricultural Tenancy Act, besides stipulating the sharing ratio between the landlord and the tenant, lays down clearly the obligations and the rights that fall on the tenant and on the landlord depending on the contributions given by each party. For instance, a written statement should be drawn up and filed with the Justice of the Peace for every year of the contract, and the law establishes rather secure tenancy for the tenant; a tenancy contract cannot be changed without good cause. But if the tenant violates the agreement, the landlord may change the tenancy through a legal procedure.

Judges and councils in the various regions are authorized to enforce the regulations laid down by the Act. The Land Tenure Department and the Agricultural Tenancy Commission are given a free hand to improve the tenancy regulations; they are also supposed to pass information to the tenant farmers and to help them to draw up tenancy contracts. However their efforts in this direction have not been enthusiastic and much has yet to be done.

# DISCUSSION ON AGRICULTURAL ECONOMICS RESEARCH IN SOUTHEAST ASIA

## 1. H. VON OPPENFELD (PHILIPPINES)

I should like to confine myself to the research activities in which our Department of Agricultural Economics in the College of Agriculture of the University of the Philippines is engaged at present.

Our experience in research in agricultural economics is not really of very long standing. The Department of Agricultural Economics has existed in our College since 1919, but the activities were largely confined to teaching and this teaching was based mostly on American and English textbooks. There were no funds available for research and what little research there was, was done by some ambitious and interested Faculty members who managed to spare some time from their heavy teaching schedule to carry out research either single-handedly or with the help of students. These students, who majored in agricultural economics and whose number seldom exceeded four, would undertake undergraduate research and write a thesis as one of the requirement for their graduation. In this way a fair amount of research was done.

This situation lasted till the beginning of the present decade when by an agreement drawn up with the Government our College became at the same time a central agricultural experimental station fo rthe Philippines and funds are now available to the College to conduct research. Some of these funds are being used for work in the field of agricultural economics.

We started out with research in farm management — I have discussed some of the results of this project in the last session. In this connection I must say that the need to obtain results quickly both for their own sake and for the sake of future planning compelled us to adopt what we might call the "shotgun" method of investigation. We constructed a questionnaire to obtain information on farm conditions and used this on selected farms without really paying due regard to the requirements for the rigid type of research where you first define your problems, establish your hypotheses, adopt the appropriate sampling procedure, and so on. However, on the basis of the results obtained, we are gradually trying to move in that direction.

Farm management research is also being done on a regional basis. For instance, our Department which has now some experience in this work is cooperating with another College — the Silliman University — in one of the southern islands of the Philippines, where we are guiding their research workers in getting more information about problems around the region. We are also interested in research which tries to define the problems of types of farming, like coconut farming, rice farming, citrus farming. In other words we are aiming to determine the character and the problems of a certain farm enterprise and get information which will, we hope, be helpful to farmers and government agencies concerned with the problems of farmers.

We are just now planning to start some work concerned with the problems of land settlement. The Philippines Government has several projects of organised settlements, and we hope to study the problems of the farmers involvd in these

projects in order to help the settlement agencies to take the kind of measures that would make their projects more successful. For instance, we think that there may be a need for work in the field of land economics, that is, in establishing an economic classification of land resources that would perhaps enable the Government to follow a wiser policy in the organised settlement projects. However we are only in the planning stage as far as this work is concerned.

As far as work in the field of farm credit is concerned, I have discussed this in the previous session. More recently our emphasis is in the field of marketing, and we are starting with the problems of rice marketing. One project, for example, is the study of marketing at the farmer's level. Other projects concern rice marketing at the miller's level, the processing and milling of rice, the wholesaler's business and the retailer's business, and finally a study of rice consumption.

Also some work has been started on the marketing of perishable products. This is concerned with the study of market innovations and of the potential effects these innovations might have in improving the farmer's income as well as the quality of the products.

We are also studying certain specific problems of the FaCoMa, the farmers' marketing association.

These in brief are some of the activities which we have undertaken in our Department. We now have a small research staff comprising one research professor and three or four research assistants. The financial means to carry on the research work has been forthcoming, especially since we have been able to show results from our research. We are now receiving funds from the Government, from Government corporations, from private businesses in the Philippines, from agencies and foundations outside the country. We are hopeful that the funds will continue to increase, and at the moment the bottleneck is not finance but skilled manpower to carry out research.

*Addenda.* Professor Oppenfeld has since his return sent in a written statement setting out a complete list of research projects currently active in the Department of Agricultural Economics of the College of Agriculture. This list is reproduced hereunder; the names of individual workers engaged in the projects are not mentioned. In respect of each project the project title and a brief summary of the purpose and procedures are presented.

1. "Palay Warehousing in FaCoMa's". A study of palay warehousing practices, cost and returns in 56 FaCoMa warehouses. Results now being analysed.

2. "Real Property Tax as a Source of Income for Barrio Government". This is a part of a larger effort to measure the competence of barrio people to conduct their own affairs through barrio self-government.

3. "An Economic Analysis of Retailing Rice". A six months' study of rice retailing in 54 retail stores, plus a business analysis of the same stores. The study also includes testing of the ganta as a sales device, pre-packaging of rice, and developing of a rice merchandising box.

4. "Small Farm and Household Tools and Equipment Research and Development". An economic survey of existing tools and equipment to study the need and feasibility for using more efficient tools and methods.

5. "Production Incentives in the Crop Sharing Arrangement of Lowland Rice Farms". A study of the effect of production incentives and technical guidance on farm practices, yield and income of rice tenant-farmers.

6. "Farm Management Study of Negros Oriental". A cooperative farm business survey in Negros Oriental to provide a guide for agricultural teaching and extension activities of Silliman University.

7. "Marketing Corn in the Major Corn Production Area of the Philippines". A survey of 372 corn farmers, 33 corn wholesalers, 29 retailers, and 19 corn mills dealing with marketing procedures and problems.

8. "Land and Labor Utilization". A study of five major farm enterprises for the purpose of developing methods for gathering and analysing data on land use, labor requirements and seasonal farm labor distribution.

9. "Development of Improved Merchandising Practices for Selected Farm Products". A study of many facets. It includes the study of livestock sales, vegetable containers, fruit packaging, consumer purchasing habits, and operating margins for food stores.

10. "Pilot Study in Farm Development". Results of present-day research are being extended to individuals and to groups of farmers to determine the effect of farm management extension on farmers' income.

11. "An Analysis of the Crop Loan Operation of the Agricultural Credit and Cooperative Financing Administration". By means of a two-stage sample, an economic analysis is being conducted of FaCoMa lending operations and of farmers who received crop loans, in order to determine factors affecting loan repayment.

12. "An Economic Analysis of Management and Marketing Practices of Poultry Farms". Input-output data are being gathered on commercial poultry farms to determine capital requirements, operating costs and returns, and marketing practices.

13. "Improved Merchandising Practices". A survey of leading farmers, wholesalers, retailers and consumers concerning desirable practices for farmers to follow in selling their products.

14. "Practices of Rice Wholesaling in the Philippines". A survey of rice wholesalers in the Luzon area to study their marketing operations and practices.

15. "Economics of Rice and Corn Consumption". A survey of consumers throughout the Philippines concerning the purchase and the use of rice, corn and their substitutes.

## 2. UDHIT NARKSWASDI (THAILAND)

Research in Thailand in the field of Agricultural Economics is only just beginning and is very limited in scope. Rather than enumerating what little that has been done, I should like to touch on the activities in which I am involved, and to bring out from my experiences some of the problems which we encounter in our work.

Kasetsart University is a new university, established about 15 years ago, and and its Department of Agricultural Economics was set up only 4 years ago. The number of skilled research workers we have been able to train in the few years is very small indeed, which is one of the reasons why research in this field is so restricted. Another reason is financial. We all know that field research is very costly; for exemple the project of which I am in charge and from which I draw my experiences for discussion costs in the region of 80,000 bahts ($1 Malayan = 7 bahts approximately). And unfortunately we have very few agencies, government and otherwise, from which to obtain the necessary funds.

The research project I suppose to base my discussion on is concerned with the marketing and channelling of rice.

It is generally known that the Thai economy is dependent to a very large extent on rice. Of the total area in the country under cultivation, about three-quarters is devoted to rice. The estimated annual value of rice production is about 40% of agricultural, forestry and fishery production. Not only is rice the staple food of the Thai people. but it is also the most important item of export. Thus rice accounts for just under half of the total value of exports.

Most of the rice is grown in the Central Area. Its production is sufficient to meet its own demand, to make good the deficiencies in the other areas, and to form the bulk of the rice exports.

In view of the importance of rice in the economy of the country, it is unfortunate that no study has been undertaken of the distribution and the marketing of rice, such as the number of channels before it finally reaches the consumers, the cost incurred in milling and generally the total cost from the point of production to the point of consumption.

Closely connected with the marketing problem are the problems of farmers' indebtedness. Like most farmers in this area, our farmers are indebted nearly all the time. Although there are cooperatives from which the farmers can obtain credit, it has been estimated that only 6% of the farmers in the Central Plain borrow from the cooperatives, while 94% borrow from private moneylenders most of whom are rice dealers. Again in common with other countries in this area, the following two aspects of rural indebtedness are to be found in Thailand: the very high rate of interest imposed by the moneylenders, and the repayment of the loan plus interest by an equivalent quantity of rice after harvest. The close connection between rural indebtedness and marketing of rice is therefore evident, and hence the need to study the two problems together.

One of the major difficulties in planning field research in Thailand, as I imagine in most countries in this area, is the lack of information to serve as the basis for setting up a sampling frame. Further, little, if any, research has been done previously to provide experience and guidance in the selection of the sample. For, with the large area to be covered and very limited resources in terms of manpower and finances, there is undoubtedly the need to employ sampling method.

The method of selection I used in the survey under discussion is briefly as follows. The Central Plain area, to which the survey confined, comprises 35 out of the provinces in Thailand. From these 35 provinces we sampled 20, the probability of inclusion for each province being proportionate to its average rice production. Within each selected province four categories of units were sampled for the study, namely the farmers, the rice dealers, the rice millers and the rice marketing cooperatives, these being the important agents concerned with rice marketing.

Four different sets of questionnaires were used for the four categories of persons or organisations included in the study.

I should like now to bring out some of the problems connected with the field work. These problems can be distinguished into those arising from the interviewers and those arising from the interviewees.

In the project under discussion I was anxious to make a success of the venture and to obtain as reliable information as possible so that research of this kind can

be shown to be really useful and so that greater support will be given to field research in the future. I was therefore fortunate in being able to make use of undergraduates as interviewers. Even so, difficulties arose.

I think it is true to say that the success of field work in underdeveloped countries depends on the interviewers to a greater extent than in advanced countries. The prevalence of illiteracy among the general populace necessitates the filling in of the questionnaires by the enumerators through interview. This in turn means that the interviewers must be properly trained in their approach to the interviewees, in their understanding of the questionnaires, in the way they put the questions over and in the way they fill in the questionnaires. Remember they have had hardly any previous experience in field work. Now at the training stage they seemed to understand all that was taught to them; when they were invited to raise any doubtful point or any matter not clear to them, they maintained absolute silence. They might have been shy,or they might have understood some of the points quite differently from the real meaning. Unless proper care is taken, it will not be until the results begin to come in when one realises that that they have not really understood some of the vital points; by then it may be too late to undertake corrective measures.

Even worse is the possibility of some interviewers adopting the simplest method of filling in the questionnaires: the simplest from their own point of view and for their own convenience. This is the method whereby they go out into the field, not to interview the persons or organisations allotted to them but rather to give themselves a sort a holiday with pay. They manage to get their questionnaires filled in not through interview, but from what they *think* should be filled in. The provision of close supervision and of field-checks should go a long way towards combating this danger. In my project I provided a rather high ratio of supervisors to interviewers, namely 10 supervisors to about 40 interviewers.

From the interviewees too the difficulties are many, and perhaps worse because they are much more difficult to control.

I mentioned earlier that the majority of them are illiterate. Because of their illiteracy they do not normally keep records of their transactions. Any such records, any accounts, would have to be obtained through the interview itself, and the interviewees have to depend on their memory to supply the required information. This applies especially in the case of the farmers who are generally willing to cooperate, but whose dependence on memory is a weak point. We all know how unreliable memory can be in this respect.

A more serious difficulty exists in the case of the traders and the millers. These are unwilling to cooperate, and their unwillingness results not only in open refusal but also in deliberate distortion of facts. In their attempt to avoid paying income tax or to pay as little as possible, many of them usually keep two sets of accounts, one for their own use and the other for the purpose of tax assessment. Now when these people were approached by our interviewers to supply information as to their transactions and accounts, their fear that this information would be disclosed to the income tax authorities prompted them to refuse to cooperate altogether or — perhaps a wiser course for them — to give the information based on their second, false set, of accounts.

To remedy this situation we normally sent interviewers who were residents of an area to that particular area, the reason being that they are well acquainted with the area and with its people and therefore can more easily have the confidence of the traders and millers. Also perhaps they could better assess on the spot whether the information they were provided with was reasonably accurate or not.

In spite of this, however, and in spite of assurances that the information supplied would be treated as confidential, no satisfactory data could be obtained from a number of traders and millers. We had no alternative but to expand the sample of this class of interviewees until the required number of satisfactory returns were obtained.

No trouble of this kind was encountered in the case of rice marketing and credit cooperatives. Their accounts are generally well-kept, and being controlled by local officials of the Department of Agriculture, there was no difficulty in securing their cooperation.

## 3. C. V. PLATH (THAILAND)*

I want to take this opportunity to explain this: We have more than one research project in operation in Thailand, but only one interesting one. We have a project on socio-economic problems, a study of the socio-economic problems in a new fishing village. We have already got the data and they are now in the process of being analysed. Another project is on egg marketing. The third one is in the stage of heading for the field and it is a farm management survey aimed at obtaining information on enterprises that will be used first of all as a basis for extending supervised credit in one limited area of Northern Thailand.

Our studies so far have been largely descriptive and I am saying this rather critically. While recognising the need for more and more information about our agricuture in Thailand, we should attempt to be in a better position than we have been in the past to advise, certainly our Government and others too, including the farmers operating their own farms, on some of their economic decisions rather than merely describing what they are doing.

I want to mention a publication that has just come out and this is really in a tentative or preliminary stage of publication just now. It is called "Agricultural Economics Research in Asia and the Far East", and is issued by the Economic Commission for Asia and the Far East. I should like to bring out some points from the Foreword and comment upon them.

According to the Foreword, Part I of the book aims to examine the role of governmental and agricultural economic organizations in the collection and analysis of data with a view to facilitate the formulation of agricultural economic policy as well as the role of these organizations in resarch, to review the facilities available for training and research in the universities and their limitations, and to throw light on the recent trends in research particularly the shifting in emphasis on the different topics of agricultural economics and also the changes in methodology. This highlights the action to improve facilities for training for research, the problems likely to arise thereby and the role of the international organizations in helping the countries to solve these problems.

In Part IV of the book an attempt has been made to bring together valuable information on research work in Taiwan, India, Pakistan, the Philippines and Thailand. I cannot explain why the other ECAFE countries are not included in this review; perhaps the distribution of the book at this stage may bring forth contributions from these countries for inclusion in future editions of the book.

* This talk was actually given later on in the session, but since it refers to the same country as the preceding talk and is in some ways an amplification of it, it is placed here for the convenience of readers.—Editor.

I should also like to refer to the work of the Council on Economic and Cultural Affairs which is putting more and more of its resources into the development of research methodology in this region. Dr. Clifton Wharton has just been appointed as Regional Represetnative of the Council for this area with his headquarters in Singapore. I am sure that it would be one of his main aims to help all of us in this region to improve our research methodology, and I suggest that we make full use of his services not only in the matter of obtaining the Council's funds but also in the matter of exchange of informaton on research methodology, techniques and so on.

We in Thailand for instance are very interested in what you are doing in other countries around the area, what techniques you are using in your research. We want to have information to serve as basis for judging which of these techniques we can use in Thailand, what modifications will be needed in our using them, and equally important, what techniques must be regarded with caution because they have been found wantng in other countries.

May I stress that for useful exchange of information, greater emphasis should be placed on the way you are conducting your research, although we would surely be just as interested in the results of your research.

## 4. J. B. HENDRY (VIET-NAM)

During the four years which have elapsed since the Republic of Viet-Nam achieved independence, there has been an understandable emphasis on programs of action — "crash" programs which have been initiated with a minimum of study or research preceding them. The problems facing the country were enormous, and almost any concrete program was probably a net contribution to economic or social welfare. At the present time, however, some of the urgency is diminishing, and there appears to be a growing recognition of the importance of accurate data and research studies for planning purposes, and some willingness to delay operations until situations have received at least some study. It would be a distortion of fact to infer from this that economic research, and research in agricultural economics in particular, is now either extensive or of uniformly high quality, but a start has been made in some of the right directions. This paper is a report on the major research activity that has been completed, or is currently under way.

Most of what is now the Republic of Vietnam has always been an area of specialization in agriculture. The immediate economic development of the country will be in increased agricultural production, and it is highly probable that its long-run future also lies in this sector. More than three-fourths of the population are now directly or indirectly dependent on agriculture for their livelihood, from peasants working on extensive rice fields in the south to tribesmen on the hillsides of the high plateau region of the north. The two major export items at present are rubber and rice.

Despite the importance of agriculture to the economy, almost no accurate data on crop yields, areas under cultivation, or numbers of livestock were available after the war. French estimates, at one time quite comprehensive, have not been available for more than ten years. The data which are now in use are assembled by the Ministry of Agriculture from reports which start at the village level and work up through provincial offices. These reports are regarded with considerable skepticism because they are based essentially on the unverified reports of village officials, and are also probably altered to some extent at the provincial level. In addition the reporting system is very slow, and it usually takes several months for reports to filter up to the Ministry, be assembled there, and become available for general use.

To overcome this type of problem, the Ministry of Agriculture established an Agricultural Economics and Statistics Service early in 1957 to begin the collection and analysis of improved data. Twelve people from the Institute of Statistics of the Department of National Economy were assigned to carry out the functions of this new section, assisted by a working party of technicians from United Nations agencies and the American Aid Mission. This new section was largely inactive until early this year, but since that time work has begun in a number of important areas, primarily in estimating rice production.

The work currently in progress really breaks down into two phases — estimating the area under rice cultivation, and estimating the size of rice yields. To measure the area under rice cultivation, the southern region of Viet-Nam — the major rice producing area — was divided into three sub-areas, each relatively homogeneous with respect to rice production characteristics. One area includes the delta region immediately south of Saigon, where the typical pattern is small fields, small holdings, considerable irrigation, and intensive cultivation. A second area, further south and west, is characterized by extensive rice cultivation, large land holdings, and some share cropping, although it is also an area where many farmers have *de facto* expropriated the land they work. The third area extends north and west of Saigon, where rice is grown largely in scattered patches of land cleared in the forest.

A sample of 160 villages was selected in these three areas, and each farmer in the sample villages was given a questionnaire which asks for the number of fields he cultivates, the area he cutivates, and the area he has planted in rice. The questionnaires were distributed and collected by hamlet chiefs, each of whom had received some brief orientation on the purpose of the questionnaire so that he could provide some assistance to those filling in the replies.

The reports on areas under cultivation in the sample villages were then expanded to give figures on a province basis, and these, in turn, were combined to give a regional total for the south. The initial result of these findings was a drastic revision downward of estimates of the area under rice cultivation. In some cases, the former estimates based on the village reporting system turned out to be three and four times as large as those which were derived from the sample.

The second phase of this overall project is designed to provide a more accurate measure of crop yields. Clusters of fields in the sample villages have been selected for harvesting under the supervision of Agricultural Economics and Statistics Service, and at harvest time the crops will be cut, dried, collected and measured under uniform controlled conditions. No results are available from this part of the study because the major harvest period does not begin until October. However, field clusters in two areas of early harvest have just been tested in this way largely for the purpose of teaching measurement procedures, and they show paddy yields of 2.5 to 3 tons per hectare. This compares to the estimate of 1.2 tons per hectare which has been used. This is a startling difference, but the full significance of these preliminary findings is not clear because the fields selected had been given large doses of fertilizer under somewhat special conditions. In all probability, the yields recorded reflect maximum possibilities rather than an average.

From these early results in both phases of the study, it seems reasonable to expect a substantially different set of estimates of acreage and yields, and because of obvious disadvantages in the previous methods, the new estimates should be much more accurate.

The same procedures will be expanded to provide a sample survey of agriculture throughout all of Viet-Nam. Present plans call for an increase in the number of sample villages to 250, and the survey will measure the production of all crops

and livestock. This survey is scheduled for 1960, but it has already received governmental approval and budget appropriations have been made for it. Although this program is sometimes referred to as an "agricultural census", or a "sample census of agriculture", it is in fact simply an enlarged survey of the type used for the first time this year.

The main effort of theAgricultural Economics and Statistics Service has been in the programs just described but it does have a few other studies either under way, or projected for the near future. For example, the Service is now making a survey of pine reserves in the mountain region near the city of Dalat. Aerial photos of the region have helped to locate major stands of pine, and ground parties are now engaged in going through these areas to estimate the size of the stands. Paper and pulp products represent one of the more promising areas for industrial development in Viet-Nam and important savings in foreign exchange could be realized by utilizing existing timber resources. Another project seeks to find some way to improve the current reports of crop conditions, since the present methods, already described briefly, are extremely slow and subject to unknown margins of error. This project is now in the planning stage only, but a number of alternative methods of reporting are being considered for testing at some time in the future.

In addition to these programs of the Agricultural Economics and Statistics Service, another important research effort was carried out in 1957 by the Institute of Statistics and the Directorate General of Budget and Foreign Aid. A joint working party from these agencies undertook to obtain estimates of rural incomes, expenditures, and home consumption of goods produced on farms. Interviewers questioned a total of 405 households located in 39 villages throughout all regions of Viet-Nam. An attempt was made to interview at least two large, three medium and two small-scale farmers, one non-operating landowner, and one farm laborer in each village. Final published totals were based on replies from 363 of these households. Totals are given for the sample as a whole and for rural Viet-Nam, and they show estimated consumption of goods and services in 1956. The study also gives estimated income by type of farm produce and by other source of income, the age distribution of the sample, and the area under cultivation.

This is an important initial effort to measure farm income and farm expenditures, but it is difficult to assess its value without more work on the same problems. As things now stand, available and comparable estimates show enormous variation. For example, unpublished national income estimates for 1956, based on reports from the Ministry of Agriculture, put rice productoin at more than 50 per cent. below the estimates made from this study. The forthcoming survey of rice production by the Agricultural Economics and Statistics Service should provide a valuable check against which to evaluate estimates which vary as widely as this.

Another important gap in our knowledge of rural Viet-Nam is that relatively little is known or published about village life, particularly village life in the southern part of the country. French and Viet-Namese scholars have done some work on village economy and administrative practices, but for the most part these related to the Tonkin delta in North Viet-Nam. Since villages in the south tend to differ substantially from those in the north in the type of agriculture practised, in conditions of land tenure, in administrative relationships, and in village culture, generalizations which were drawn from studies of north Viet-Namese villages may not be entirely valid for the south.

Members of the Michigan State University Advisory Group, in cooperation with faculty members of the National Institute of Administration, have begun a detailed study of a single village in the rice growing delta south of Saigon. One political scientist, one anthropologist and one economist are engaged in the study,

and each conducts research in his own special field. The work of each is made available to, and discussed with, each of the other. Since much of village activity is difficult to classify under the familiar discipline headings, the regular interchange of information is essential to each of the participants. The results of this research will appear initially in separate studies (e.g., a study of local government and administration, a study of the village economy, etc), but the ultimate objective is a single publication which will attempt to present a unified picture of village life in all aspects.

The study of the village economy places emphasis on attempting to understand the functioning of the village in economic terms. Data being collected at the present time will provide descriptions of land tenure and land-use patterns, the degree of specialization of occupation and specialization of production, the use of production, degree of dependence on outside markets, debt and credit structure, and rent and tax charges on the land. Family budget studies will attempt to measure the degree of reliance on cash income, the type of diet, and the patterns of family marketing which are typical of the farm. The budget studies may prove particularly valuable in light of the wide difference in present estimates of family or *per capita* rice consumption in Viet-Nam, for this will provide the first estimates based on any continuous and controlled measurement of consumption at the family level.

The descriptive material on the village economy, taken together with the other material on administrative and cultural institutions in the village, should help to identify the factors which determine the extent and direction of economic effort. Ideally, it should be possible to isolate those aspects of village life which encourage change and those which resist it. Finally, the study as a whole should provide a chance to test some of the generalizations about rural life now current in Viet-Nam.

Before concluding this report on the status of research in agricultural economics in Viet-Nam, I would like to include a few observations on some of the things which affect the present level of research activity, as well as future work. The first, and most obvious, factor is the lack of trained, experienced and enthusiastic personnel. No time need be taken to explain how this situation arose, for it is a common enough problem in this area. What is encouraging is that this situation should improve steadily, if not very rapidly. ICA funds are available to send Viet-Namese students to the United States and to other countries for study, and in time there should be a substantial core of people with some training in economics and statistics. While some returnees have become discouraged over problems such as lack of funds and lack of facilities, and have lapsed into administrative jobs, others have steadily gained stature in their work, sometimes even though they have had relatively little or no formal training.

A more general type of problem stems from the difficulty in getting accurate information from farmers. On the positive side, most people who have worked in the field agree that the Viet-Namese farmer is extremely cooperative and willing to answer questions. However, as is true in other areas, he is not accustomed to think in quantitative terms, and may have little concept of the size of his crop or the area of his fields in any of the standard units of measurement. The farmer is usually able to give accurate descriptions of what he has at the time, but the farther back in time a question probes, the less reliable his answer is likely to be. This is true for physical quantities, but even more so for questions dealing with incomes or expenditures in money terms.

Again on the positive side, funds for research are more or less available, particularly where a program seems feasible and is already making some headway despite heavy odds. ICA and UN technical advisers can usually obtain some funds when

there are good prospects for a successful project. Further, the Ministry of Agriculture seems interested in research, and has actively encouraged and supported research in various areas.

If my presentation has succeeded in its objective, you will by now have gained an impression of qualified optimism about research in agricultural economics in Viet-Nam — some progress, some work under way, hope for steady improvement in quality and quantity of personnel, and a great deal of work yet to be done.

## 5. U. A. AZIZ (MALAYA)

Before talking about the research that we have been doing here in the university, I should like to mention a rather general problem that the other speakers have not dealt with and this concerns semantics rather than statistics.

In designing questionnaires for a research project, we draw up our questions in English, and we choose our investigators from people who can speak the English language. We spend a long time training them to try to get the right answers: for instance we tell them not to suggest any answer to the interviewee, and generally we warn them against biases of one kind or another. In the circumstances I mentioned above, we are likely to run into a source of bias because of linguistic problems. For in general the people we are investigating speak not English but one of the local languages or dialects. We must therefore train our investigators, not only how to put across the questions in the language of the interviewee, but also in the local equivalents of the various terms used.

As an example of the last point raised above, in Malaya rice-land is known by different names in various places, such as *sawah* or *bendang*. Now a Malay farmer may answer no to a question whether he owns any bendang, but if we follow up this question by asking if he owns any sawah, he may answer in the positive. We can imagine the kind of bias that can arise if proper care is not taken in this respect. It is generally true that in this region interviews have to be carried out in another language, and that the lowly-paid field investigators are expected to solve the translation problem for which they are hardly qualified.

I should like now to discuss the agricultural economics research which we are doing in the Department of Economics. Our research can be distinguished into general research and specific projects. I shall deal with the specific projects first.

Often I have carried out specific investigations for the benefit of an individual organisation, and more often than not it has been for the Rural and Industrial Development Authority. I have managed to persuade the Executive Committee, of which I am a member, that we should carry out research as an aid to sound policy. Funds are made available for specific research projects sanctioned by the Committee.

We have, for instance, carried out projects dealing with community centres. When it was first suggested that the Government should build community centres, there was much enthusiasm. Community centres had been successful in England and other places. Some people in the Government here had the idea that mass building of community centres would solve many of our development problems. As a result the Government built many centres in 1949, 1951 and 1952, and were planning to build more, about one million dollars having at the time been set aside for this programme.

Before the plan was under way, however, I suggested that the existing centres should be investigated to serve as a basis for judging whether the planned expen-

diture was justifiable. The results of a very careful survey of the existing centres showed that only about 10% were in use at all and 5% were not properly used. More than 80% of these centres were not effectively used, and most of the centres were in a dilapidated condition. On this basis, the whole project of further development was abandoned.

We then became involved in a project aimed at improving the economic conditions of five villages in the Malacca area where the Government had intended to provide water, electricity and model houses. Again these were thought to be what the people wanted. We carried out a survey to find out whether people could afford the model houses, whether they needed the water and whether they wanted the electricity. We found that income levels in these villages were very low, that the people had enough wells, and that they did not particularly want electricity for the simple reason that they did not have the money to pay for it. What they wanted was more land in order to extend their farming activities. Government was thus saved from the expenditure of one and a half million dollars through a research project which cost some $20,000. Apart from this, we were able to give the first complete picture of life in the five villages in terms of occupation, of distribution of income and personal capital, and of the uses of land.

Recently we have become more ambitious and have embarked upon a project for the Development Authority to answer the question why the rubber farmers in a certain part of the State of Johore do not sell more of their latex to a factory which has been set up by the Authority nearby. The factory can handle some 4,000 pounds of latex every day but is only getting 2,000 pounds. This survey, which is not yet concluded, makes use for the first time of sampling techniques in agricultural surveys in Malaya. By and large I am rather wary about using sampling techniques for we do not as yet have much information regarding occupation structure, tenure relationship, etc., to serve as a basis for sampling.

I come now to the general type of survey, which comes nearer to my heart.

This kind of survey is costly and not easy to conduct, but it is research which goes deeper than specific projects and is nearer to what we might call pure research on rural life and rural economic problems. The aim in this type of research is to find out how the village or *kampong* is organised economically. This means also studying the social, political, historical, geographical and other aspects. In short, we must endeavour to grasp the fundamental activities that are going on in a kampong.

Now one of the first problems is the identification of any one kampong. The borderlines between kampongs are sometimes not geographical, but may have a social or other basis.

Having identified a kampong, and before the actual research, we must have some general idea of the village and establish good relationships with everybody in the village. We must have a basic knowledge of the population distribution and of the status of the various people there. When we have this basic knowledge, we can proceed to carry out two kinds of research.

First, continuous studies on certain aspects of village life can be carried out, as we have been doing in a village in the Northeast coast of Malaya. There we have been interviewing sixty persons regularly, asking them questions relating to their activities over the past few days, their occupation, their income, and so on. As the interview is repeated at regular intervals, the people begin to accept it at the end of five or six months as a normal thing in their way of life.

At the same time we began to collect information from records, such as records of cooperative societies and other organisations.

The second kind of research on this particular kampong comprises an intensive survey by a group of investigators for a short period of time. During the last university long vacation, we brought our Honours and Third-year Economics students to stay in this village for six weeks. During this period each student investigated a specific aspect of economic life in the village. I shall give you some idea of the aspects that were covered.

We want to know something about the rural shops which provide the various consumer goods to the village households. There are some 40 shops in this village serving the households in this village as well as those in the surrounding villages. One student spent his time interviewing the shopkeepers, taking their inventories, making notes of their accounting systems, discussing with them the problems of giving credit to consumers and getting credit from wholesalers, and so on.

Another student studied individual household consumption patterns. Each of the sixty families included in the first survey was interviewed with the view to constructing family budgets.

Another project concerns the study of the transport problem. We want to find out what transport is available within the village and to other villages. The administrative unit (called *mukim* in Malaya) within which our village is located is about 4,000 acres in size. A trunk road runs through it and there are several small roads connecting the villages. Bullock carts, buffalo carts, bicycles and buses all play an important role in the transport of goods and passengers. The study of the transport pattern was concerned with the services provided and with the economic structure of the transport facilities available in the mukim.

Next, we want to find out the role and economic behaviour of the fish-merchants in the village. One student spent his time interviewing a somewhat reluctant group of fish-merchants about their activities and historical background.

There are two fish marketing cooperatives in this village. One student undertook to study the economic activities of these cooperatives as well as various other matters such as leadership, organisation, human relations and so on. It is hoped from this study to gain a better understanding of the economic functions of tho cooperatives, the level of success which has been achieved, and their relationships developed with individual fishermen.

The study of the land tenure patterns in the rubber and coconut areas near the village is the topic of yet another project. Land distribution in Malaya has been undergoing subdivision and fragmentation at a fairly rapid rate, and there is a tendency for ownership of land to be concentrated in the hands of a smaller and smaller number of persons. The problem is to determine the extent of this development.

In addition to these and many other aspects which I have not mentioned for lack of time, we also had social and medical students undertaking investigations relating to their fields. For example, one topic of a social nature investigated is an attempt to find out how the village looks after the people who cannot look after themselves, such as the aged, the lame, the blind and the mentally ill. On the medical aspect, 33 Fifth-year students from the School of Medicine came to the village and carried out a thorough medical examination of the people, their houses, the drainage and the water systems.

Last but not least is the study of magic. One of our former students, now working in another department, studied the role of magic which is being practised by the fishermen. To try to improve their catches, fishermen slaughter cattle and offer special prayers on the beach before setting out to sea. This has important psychological effects, and it would be unrealistic for us to predict economic behaviour without taking it into account.

To help in the analysis and the interpretation of the results of these studies, the participating students have been meeting in special seminar sessions. At each session, one student reads a short paper relating to his research for general discussion. The aim is to coordinate the various aspects so that we can obtain a comprehensive picture of the ways of life of the villagers and attempt to work out how we can help them improve their conditions.

All this should not be taken to imply that research is being carried out for research's sake. I believe that all research should be for a purpose. The motive in our research is to help the nation to understand what is going on in village life.

Out of my own studies of village life and its economic systems I have reached certain conclusions about the processes that are at work. For example, the distribution of wealth is becoming concentrated in the hands of a smaller and smaller number of people, that poverty will tend to get worse as time goes on, and that the gap between the richest and the poorest will tend to widen. What is more serious, however, is my impression that villages in Malaya are mostly in a state of disintegration. The results of our studies will probably reveal to us the impact of the modern economic system on the old villages, leading to the disintegration of the latter. If this is so, then the problems of rural development, community development and overall economic development must be studied and must be designed to take into account not only the problems of poverty, but also this problem of disintegration of the villages.

If we merely think in terms of national income and in terms of raising productivities and incomes, and overlook poverty and the problems of disintegration, we will not achieve much success in our research. We need to apply the type of saturation survey I have described, where many aspects of living conditions are examined thoroughly. The net result of the study will be much more informative because it will lead to a new understanding of the ways of life of the people and will enable us to see them in a new dimension. This is my opinion about the purpose of developing economic life in the villages and why, in turn, this type of research can be very useful.

## DISCUSSION ON THE SESSION ON RESEARCH

*Professor Silcock*: In the light of the amount of information that has come out and in view of the similarity of the problems that have been discussed, it would appear to be desirable to make some arrangements for coordination, and perhaps even more important, for getting some person or some organisation to collect and collate the information for the various countries in this area for the purpose of coordination. I wonder to what extent this can be achieved.

*Dr. Brown*: May I ask a question as to how the results of the research are put to use?

*Dr. Hendry*: Let me say something in the case of Viet-Nam. As far as the projects carried out by the Michigan State group are concerned, the results of the research and the reports by the group are put in a published report form which has been submitted to the Government and has since been made available for general distribution. It is distributed, among others, to all the United Nations Organizations. It is hoped that at a later stage it will be published privately.

As far as government research is concerned, the results are available in the regular publications of the various government ministries. The information on family consumption and family expenditure pattern, for example, is printed in a statistical bulletin.

*Professor Plath*: In Thailand the research reports are normally submitted to the staff officials in the Government, for practically all the work is carried out under government auspices. The published reports are distributed to all government offices in the country.

*Ungku Aziz*: As far as we are concerned, the Government is responsible for publication of the reports of work carried out on its behalf. We would welcome publishing a good deal more than has been done so far. I think that henceforth through the Department of Economics in the University, through government authorities and through our Economic Review, we will certainly publish our reports on a larger scale in printed and in mimeograph form.

# AGRICULTURAL PRODUCTIVITY PER WORKER: IMPORTANCE IN SOUTHEAST ASIA

By C. V. Plath

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Productivity, or output, per worker is a basic measure of economic progress, an indicator of achievement in the level of living of a group of people.

At the lowest level, at the beginning of economic development, a group may first be only "gatherers" who harvest the products of wild plant and animal life for home consumption. Output per worker or per family is low and subject to considerable variation from such natural causes as weather, disease, insects, and fire.

As these people learn to have greater control over nature, their productivity increases and surpluses above family requirements develop. Trade and commerce is promoted, and specialization of production effort soon develops to permit a higher level of living. With greater control over nature in the production of goods, and with increased commerce and specialization, man becomes less subject to the risks of nature. But he substitutes such man-made hazards as the vacillating regulation of production, prices, and commerce. These developments, which can lead to an increasing level of living, require the application of more and more human intelligence — a challenge to each developing nation.

## PRODUCTION AND LEVEL OF LIVING

The level of living of a group depends upon the productivity of its workers. An improving level of living, at any level, requires an increase in production because production (goods and services) satisfies human wants. At low levels of living most of this production is food, clothing, and shelter. A greater variety of goods and services, extending far beyond agricultural production, is a part of high levels of living, as commonly expressed in most countries, both East and West. An agrarian economy, even one with low productivity, can provide a subsistence or low level of living. Greater productivity is required for high national levels of living. This production can come from 3 directions:-

(a) agriculture combined with international trade,

(b) industry combined with international trade, or

(c) a combination of (a) and (b).

Ideally, no nation can achieve as high a level of living, in terms of quantity, quality, and variety of goods and services, without international trade as should be possible if specialization of production can be promoted by trade with other countries. Our main concern in this paper is with agricultural production, as it can be used to increase the level of goods and services available to the people of the agrarian countries of SE Asia.

## DISPARITY IN AGRICULTURAL PRODUCTIVITY PER WORKER[1]

We must acknowledge the inaccuracies of much of the data on agricultural production and workers.[2] However we must also recognize the broad patterns and the wide and consistent disparity the data show for the nations of the world. Table I shows a comparison of selected countries for which data were readily available. Whether one measures output in "production units", "international units", "oriental units", or in other suitable terms, the broad conclusions are the same: A wide disparity exists among nations in the agricultural productivity per worker. Also clearly evident is the fact that Asian countries have a low agricultural productivity per worker. Of course it is true that not all countries of Asia are equally unproductive in the use of human resources in agriculture. The Asian countries that have somewhat higher output per man may well suggest methods of agricultural production suitable, with modifications, to other nations.

TABLE I. ESTIMATED AGRICULTURAL PRODUCTIVITY PER MAN

| Country | Production per head of agricultural population, 1951/52, 1952/53. (a) (Production units) (b) | Agricultural output per occupied male, post-war (c) (I.U.) (d) | Real products per male in agric., 1949-52 (e) (O.U.) (f) |
|---|---|---|---|
| New Zealand | 2550 | — | — |
| Australia | 1750 | — | — |
| U. S. A. | 1280 | — | — |
| Norway | — | 1260 | — |
| Netherlands | 910 | 992 | — |
| Argentina | 650 | 985 | — |
| Belgium | 440 | 925 | — |
| Malaya | 190 | 292 | — |
| Turkey | 140 | 127 | — |
| Brazil | 120 | 288 | 2060 |
| Ceylon | 100 | 206 | 1285 |
| Peru | 90 | 162 | 1545 |
| Egypt | 85 | — | 1265 |
| Japan | 80 | — | — |
| Thailand | — | 101 | — |
| Philippines | 60 | — | 1000 |
| India | 50 | — | 585 |

(a) Source: Barter, *op. cit.*, Table 1, p. 195.

(b) Value of 10 kg. of wheat at average world prices in 1934-38 (100 gold francs per metric ton).

(c) Source: Colin Clark, *Conditions of Economic Progress*, third edition, p. 276.

(d) International Unit (U.S.$ of 1925-34).

(e) Source: Colin Clark, p. 277.

(f) Oriental Unit (Indian rupees of 1948-49).

1. Much of this section is from an FAO paper: Barter, P.G.H. "Fundamental Factors Affecting the Stage and Status of Agricultural Development", World Population Conference, UN Rome, 1954, Proceedings Vol. 5, pp. 189-212. See also "Economic Bulletin for Asia and the Far East", UN ECAFE, Bangkok. Vol. VII, No. 1, pp. 4-5, May, 1956.

2. A glaring example is the case of Japan. The estimated production per worker for that country appears much too low (See my Table I).

It is correct to point out that Table I does not include data on the productivity per area of land. Barter[3] shows that several of the Asian countries have achieved high output per hectare, e.g. Japan, Malaya, and Ceylon. And it is relevant to mention that these countries do not have the same system of agriculture. Of serious concern is the fact that many countries of Southeast Asia continue to have an agricultural production per hectare that is less than one half of the three countries named above e.g. Philippines (43%) and India (24%). Physical environment will explain only part of the disparity shown among countries in productivity per unit area of land. Socio-economic factors are important, even vital, in an explanation of the cause-cure of the big differences among peoples to produce agricultural commodities.

Separate goals in agricultural production must be recognized in this context. Some countries face the perennial threat of famine and starvation. Here a survival goal of maximum production per area of land is of paramount importance. An increasing number of countries do not have a serious food problem. For these an economic goal of maximum or optimum production per worker is the aim. They are interested in improvement of agricultural output as a step in their economic development. Fortunately, most of the means of achieving the survival goal are also effective in making progress toward this economic goal in agricultural production.

## IMPORTANCE IN SOUTHEAST ASIA

The utility of agricultural production is not the same in different places and at different times. Therefore, not only the goals sought in agriculture but also the resources used in striving for those goals will vary with place and time.

Let me single out some aspects of the importance of agricultural productivity per worker, with special reference to Southeast Asia.

*Farmers*: Farm people are dependent upon agricultural production. Individually, their relative economic welfare is governed by how much their own family produces in comparison with other farm families, in relation to total inputs. Higher production per worker or per family normally results in greater economic returns. In countries of Southeast Asia where farmers constitute 60 to 80 per cent of the population, the welfare of farm people assumes vital importance. Millions of Asian farmers must increase their output in order to progress from subsistence to commercial farming, an essential step towards better levels of living.

Collectively, the welfare of the farm population of a country is less dependent upon the output per worker because prices, markets, taxation, government policies, and other off-farm factors assume a dominant role.

*Rural Non-farm People*: People who live in rural areas but who are not directly dependent upon farming for their livelihood usually find their economic welfare closely tied to that of the farmers in the area. The level of living experienced by the farm families is commonly reflected in the welfare of the tradesmen and others who are dependent upon the farming community.

*Agricultural Industries*: Industries that process agricultural products must have a supply source of raw materials, as well as a market for their products. A farming area largely composed of subsistence farms[4] offers an uneconomic source of

3. Barter. *op. cit.* p. 195.

4. Subsistence farms are those on which most of the production is used on the farms, with little left for sale.

supply for such industries. An area of high agricultural productivity per worker offers a greater surplus for processing, and a more reliable source of supply of agricultural products. It is also a better market area for goods and services.

*Domestic Trade*: Normally an area of high output per farm worker is a much better market for the products of industry than an agricultural region where most farms operate at a subsistence level with very little output above the needs of home consumption. However, a densely settled area of subsistence farms will have a greater volume of trade in the essential items of daily living than an equal area of larger, more prosperous farms employing fewer people. Trade in these food and clothing items, which are bare essentials, increases with the number of consumers, almost without regard to income levels. These items have a very inelastic demand.

*Non-Agricultural Workers*: The development of industry requires that workers must be released from agriculture. Theoretically, a truly agrarian nation of subsistence farms could not release any farm workers for non-agricultural pursuits. In practice those Asian countries striving to develop industry have a surplus of agricultural laborers whose employment in industry usually helps both the agricultural and non-agricultural sectors of the economy. But a stage is reached in the transition from agrarian to industrial economy when the productivity of farm workers must increase, otherwise the decreasing proportion of agriculturalists cannot release enough workers to supply the labor demand of industry without a decline in total agricultural output. Industrial nations have shown an increase in agricultural production per worker as their industry developed. There is an interdependence in these two developments although either one of them may be supported by imports rather than by domestic output alone. Imports require foreign exchange, whether it is industrial products or agricultural commodities that are imported.

The development of industry in a nation that is basically agrarian cannot proceed far without an increase in the productivity of agricultural workers. Certainly this applies to Asia as her countries plan for the number of workers required by industry, and the food for them.

*Food requirements*: All people require food, fiber, and shelter. Those agrarian countries aiming for more industry with a lower proportion of total population engaged in agriculture and a higher level of living must provide for an increasing productivity per farm worker. A smaller relative number of farmers must produce the agricultural commodities for an increasing number of non-agricultural people. A higher level of living, even without industrialization, demands more farm products. Imports could provide the additional products but foreign exchange usually is in greater demand for other purposes than for farm commodities that could be produced domestically.

*Agricultural Exports*: Most countries of Southeast Asia export some kinds of agricultural commodities. Several countries rely upon agricultural exports for a very significant share of their gross national product and government revenue. These latter countries, particularly those like Burma and Thailand which export food, face a gloomy future as their domestic demands for agricultural products, now exported, increase through population growth. Unless agricultural production increases, a crisis is inevitable. Of course, these increases have approximately kept pace with population growth in the past. But unless production per farm worker can increase, as new land becomes less readily available and of lower quality, these countries cannot achieve their goal of continued or increased exports plus a higher level of living for the larger population.

These seem to be the most critical aspects of the importance of the issue of the agricultural productivity per worker in Southeast Asia. Other points could

be made but they appear to be part of those given. And there is considerable overlap or duplication within these seven rather arbitrary items that have been singled out for mention. Perhaps more important is what to do about the situation, once it is identified.

## INCREASING AGRICULTURAL PRODUCTIVITY PER WORKER

Any country of Southeast Asia that attempts to increase the agricultural productivity of its farm workers faces important problems or obstacles. These must be solved, or at least partially corrected, before improvement is possible.

### PROBLEMS

#### (i) *Lack of Incentives*

Farmers may lack the incentives to encourage them to increase their individual production of farm commodities. Several contributing factors will apply in many situations in Asia, as follows:—

(a) Rental agreements. On those many farms operated under a share-rent agreement, the farm operator (tenant) often retains such a small share of increased production that greater output is discouraged. Too frequently the rental agreement forces the tenant to stand the costs of all efforts to increase production but he must share, commonly 50-50, all production with the landlord. If the rental agreement provides that the tenant and the landlord both share in the costs of the additional inputs in the same ratio as they share the output, then the tenant is in a more encouraging position to increase production. Of course, he may not have additional inputs, except off-season labor, to use for increased production.[5]

(b) Government policy. In some countries government policy may fail to encourage increased productivity per worker by providing a business environment that leaves an operating margin too narrow for most farmers. This situation arises when a tax or revenue structure is unfavorable to agricultural producers, or if price controls are established to help the consumers or government or middlemen at the expense of producers. In some countries, export regulations or pricing policy may discourage increased production by providing low farm prices. In countries of surplus agricultural workers, any situation that discourages increased total production is most likely to discourage any improvement in output per worker.

(c) Middleman's share. If farmers believe, correctly or otherwise, that marketing agents are taking an unfair portion of the consumer's expenditures on agricultural products, they are discouraged from efforts to increase output. The producers, particularly if the educational level is low, will not increase inputs so long as they think the middlemen will share disproportionately in the returns from increased output. We must recognize a reverse reaction to this situation among well-informed commercial farmers. They may attempt to increase total output in the face of a narrow margin per unit of product.

#### (ii) *Markets*

Plans for increased total production must include provisions for adequate markets for the products not required for home consumption. If not, market gluts may drive farm prices so low that increased production is discouraged. Several aspects of marketing may be involved.

5. Let us assume that most efforts to increase total production will also increase production per worker.

(a) Effective demand. Production above the needs for home consumption must find an effective demand if commercial production is to continue. Increased production is based upon a present or projected increase in effective demand for the products. And whether this demand is domestic or foreign is not vital to the general proposition. Of course, a steadily increasing demand usually offers a more potent incentive to increased production than a market demand that fluctuates wildly.

(b) Transportation. Farm commodities that cannot be moved to markets discourage quickly any efforts to increase production. Consumer purchasing power located where transportation does not permit the flow of products to that market is not an effective demand for the producer.

(c) Marketing facilities. Producers do not recognize a demand for their products unless marketing facilities are available to handle the commodities at a profit to them. Transportation is only one aspect of this requirement. Facilities for assembling, grading, storing, processing, financing, and all other marketing functions, as required by the particular commodities, must be provided.

Each of these market problems is directly concerned when increased total production is considered, and especially if a new product is involved. We must consider these marketing problems of effective demand, transportation, and facilities to whatever extent output per worker is directly related to total production.

## MEANS OF INCREASING OUTPUT

The means or methods by which agricultural production per worker in Southeast Asia may be increased require the efforts of farmers, but assisted by government through financing, land tenure laws, transportation and marketing, and technical knowledge. Naturally, the means must vary with space and time because the conditions for production and marketing vary from place to place and from one time period to another. It would be impractical to list the means of increasing productivity in order of priority when such diverse conditions as exist in Southeast Asia are being discussed. Therefore the following annotated list is not intend to show an ordering of priorities. Such priorities must be established by any planning group charged with increasing the production in a specific area in a particular time period.

(a) Mechanization. The use of large tractors and heavy equipment appears to offer very limited assistance in increasing the agricultural productivity per worker in Southeast Asia in the near future. Lack of capital and a shortage of mechanical ability, coupled with the small holdings, rule out a widespread use of this kind of mechanization. The small irregularly-shaped fields, and the wet paddy land also inhibit heavy machinery. However, small-size mechanized equipment will continue a slow increase in effective use in many areas. Mechanization, where feasible, usually increases output per worker more than total output. This is a less attractive goal in Southeast Asia than in developed countries.

(b) Improved tools and equipment. Many of the hand and animal tools and equipment commonly used on Asian farms can be (or already have been) improved. This offers an opportunity, at low cost, to increase output without much greater inputs. Better and more timely seedbed preparation, more effective cultivation for weed control, and more efficient harvesting and threshing have resulted in those areas where these improvements have been used. Better tools and equipment increase both total production and output per worker.

(c) Chemical fertilizers. Marked increases in yields accompany the application of chemical fertilizers in many areas and on most crops. The higher yield per area of land is an effective method of making possible a greater output per

worker. However, the ratio between the costs of fertilizer applications and the price of the increased production may rule out the use of fertilizers under present conditions in some areas. The cost-price situation will become more favorable to the use of fertilizers with the passage of time.

(d) Pesticides and herbicides. The use of chemicals for the control of insects, diseases, and weeds has increased yields significantly under most conditions. This results in the possibility of greater output per worker and total production. However, the same cost-price limitation and technical knowledge restriction apply to the use of these chemicals as in the case of fertilizers. Increased use of pesticides and herbicides in the future can be forecast with confidence.

(e) Improved varieties and breeds. The genetic and selective processes of plant and animal improvement offers great hope for more efficient use of agricultural resources. Much greater production per land area results from the use of improved varieties of plants and breeds of animals. This provides opportunity for increased production per worker as well as greater total output.

(f) Land reclamation. Irrigation, drainage, clearing, and other forms of land reclamation can increase yields tremendously. Total production will increase, but with higher yields also comes the opportunity for each worker to produce more with his labor and other inputs. We must recognize the high costs of some kinds of reclamation, but also call attention to the possibilities of small-scale land improvement projects that could be carried out on most undeveloped farms, often without outside assistance except for technical knowledge.

(g) Soil management. A wide range of practices are available for application under many conditions to improve soil tilth and fertility. Practices such as green manuring, crop rotations, application of animal manures, contour cultivation, and certain tillage methods can each increase crop yields when used properly. Higher yields per land area usually result in greater production per worker.

(h) Combination of enterprises. Careful selection of crop and/or livestock enterprises suited to the farming region and to the particular farm can add materially to the efficient operation of the farm. The proper combination of enterprises, for production for sale or home consumption, results in a better use of land, labor, and capital. Perhaps most important in Southeast Asia is the fuller use of seasonally underemployed labor for productive purposes. Of course, the diversification or selection of minor enterprises should not decrease output from the major enterprise significantly. Fuller use of farm resources, especially labor, usually will result in greater production per worker.

(i) Land tenure. Changes in the institutional arrangements under which farms are owned and operated may, in some countries, offer a good opportunity to increase production. The consolidation of fragmented land parcels, more equitable sharing of the costs and returns between landlord and tenant, increasing the size of smallholdings, and assurance of a reasonable security of tenure in land rights are important land tenure changes. These have importance in the countries of Asia; some countries are plagued with needed improvements in several of them. Properly administered changes in land tenure provide the incentive for increased production. Land reform may stimulate total production more than production per worker, at least in the short run.

This listing is neither complete nor ordered by priority. It appears to include the most important means by which agricultural productivity per worker can be increased in the countries of Southeast Asia. The implementation of these means of increased production requires the application of sound judgment accompanied by technical knowledge; the proportions of each must vary according to the circumstances.

Economists must work with the physical and biological scientists to bring about the greatest improvement in agricultural production. The "team approach" to the solution of agricultural problems has become a necessity. No longer can one man, even one discipline, know enough to solve the complex, interdependent problems of modern agricultural production.

Much economic research lies in files gathering mildew or dust because it was physically or biologically impractical, although perhaps economically sound. And should we also add the requirement of political acceptability to the list of prerequisites for successful economic research?

The application of research findings by the farmers is a major obstacle to increased agricultural production in Asia. Perhaps education for farm people is the clue. But it must be a form of education that prepares the individual to accept changes in his way of doing things, and even in his manner of living. And it must prepare him to make his own decisions, because he is a vital human cog in the improvement of agriculture and the entire economy. Extension workers must recognize this requirement if they are to get widespread cooperation from farmers.

## CONCLUSIONS

The countries of Southeast Asia have a low level of agricultural productivity per worker, generally speaking, when compared with the industrial, commercialized countries of the world. This fact seems to be widely accepted even though the quantitative measurements are subject to discussion. Furthermore, there appears to be ample evidence of the importance of the low productivity to this region of developing countries with their rapidly increasing pressures of population upon land resources. A vital aspect of the problem is what to do to solve the problem or improve the situation. Several proposals have been made, none of them specific as to place, time, or method of implementation. An additional suggestion must be made: who should be responsible for programs to increase productivity per worker?

Some of the means or methods by which the agricultural productivity per worker may be increased must be applied at the farm level. Farm management workers should assume a leading role in promoting these improvement methods. Their efforts will be far more effective if they work with the physical and biological scientists in their teaching, research, and extension. Close coordination of their efforts with those responsible for educating farm people is also critical to a general acceptance of new methods.

Other means of increasing productivity must be applied at the government level. These call for the efforts of agricultural economists working with political scientists, sociologists, and with those who formulate and administer government policies on agricultural and economic development.

Certainly an integrated, coordinated team approach to the fundamental problem of low productivity per agricultural worker is desirable. It will yield much better results than the isolated efforts of individual experts in laying a solid foundation upon which the countries of Southeast Asia may build an expanding economy.

## DISCUSSION ON THE PAPER BY PROFESSOR PLATH

*Mr. Mohd. Nurzid bin Wali*: Professor Plath has raised many interesting points on the subject of agricultural productivity per worker relating to Southeast Asia. He pointed out the widespread disparity among the nations in this

area in the agricultural productivity and mentioned that in most Asian countries the productivity is low. He attributed this disparity in productivity to economic, social and cultural factors.

I would like to bring out some of the points for discussion.

The first point concerns the existence of surplus of agricultural labour in Asian countries. This surplus labour is not contributing to the total agricultural production of the countries concerned. In other words, these countries suffer from under-utilisation of their labour resources owing to the lack of complementary resources such as land and capital, adherence to traditional methods of production which encourage low-yield and low-income crops.

In such a situation it should be possible for the surplus labour to be withdrawn from the agricultural sector without reducing the volume of the farm output. This is in fact a state of underemployment which calls for remedial measures on the part of government for better utilisation of labour.

Let us consider some of the measures. In the situation of shortage of land, the best remedial measure is the development of industries providing employment opportunities outside the agricultural sector. This is more or less the argument put forward by Professor Plath. If however an adequate supply of suitable land for farming is available, as is the case with Malaya, then industrialisation is not the only panacea for the evil of underemployment; land settlement for farming purposes can be equally effective.

Even in the case where industrialisation is necessary, it is important to remember that in underdeveloped countries the agricultural labour force is characterised by lack of mobility due mainly to reluctance to sever from family and community ties, conservatism, ignorance and inability for adjust to new surroundings. Thus even if adequate job opportunities are provided outside the agricultural sector, there is no guarantee that the surplus labour would flow automatically from the farms to the factories. This is an important problem which must be faced in any programme towards industrialisation.

Perhaps a solution can be suggested by the provision of job opportunities within the community where the surplus labour exists, thus allowing the workers to continue to live in their present locality. This implies the introduction of industrial programmes with emphasis on cottage industries which require a relatively small amount of capital. The wages paid to the labourers in such industries can be below the subsistence wage rate and the remaining portion can be derived from the family income. Thus total productivity in the villages can be increased with corresponding improvement in their economic position. Further this programme enables the rationalisation of the agricultural sector which will eventually bring about the desired goal, that of increasing agricultural productivity per worker.

Another point which I would like to discuss is in connection with the statement that the level of living experienced by the farmers is commonly reflected in the welfare of tradesmen and others who are dependent upon the farming community. This statement has to be qualified in particular situations.

In Malaya for instance, the relationship between the welfare of the farmers and the tradesmen is in some cases of a reverse nature, that is, the higher the welfare of the traders, the lower that of the farmers. This situation arises because of the monopolistic and monopsonistic position occupied by the tradesmen and the other middlemen, thus preventing the benefits arising from a higher productivity from accruing to the farmers. The reason for this undesirable state of affairs is the prevalence of the peculiar credit and marketing structure in the rural economy of the country, which has been discussed in a previous session.

A third point I would like to raise is in connection with the view that the farming areas comprising largely subsistence farms provides an uneconomic source of supply of raw material for the processing industries. In Malaya this is quite true of such crops as pineapples, but it is not so in the case of small farms in the rubber industry. I think it is P. T. Bauer who said that the rubber small farms are not inefficient in the production of rubber. Such farms fully utilise the labour which is plentiful in the country and thus save the scarce factor, capital.

An indication that the small rubber farms are economic and efficient is to be deduced from the fact that the former colonial government made it a point to protect the rubber estates against competition by the small farms. Such protection took the following two forms:— (a) Forbidding the alienation of land for new planting of rubber, and (b) Raising land prices so high as to prevent the small farmers, with their limited resources, to buy land.

## QUESTIONS AND ANSWERS ON THE PAPER BY PROFESSOR PLATH

*Mr. Wright*: I notice that in the table on Estimated Agricultural Productivity per Man, the three countries with the highest productivity are relatively new countries, namely, Australia, New Zealand and the United States. Can Professor Plath elaborate on this relationship? Is the point here the large-scale use of fertilizers on new land as against the older countries where the farmers have had a rather more extended use of the land in any case?

*Professor Plath*: I think in those areas where some of the highest productivity per worker does exist, men had built up the production. For instance in the United States the highest production per man is to be found in areas where the farmers have either maintained or increased the fertility of the soil.

Another point in this connection. In the newer countries there is extensive mechanization and many conditions have led to this development. For instance these countries have been settled mainly after the Industrial Revolution and there was plenty of land but little labour.

May I take this opportunity to refer to one point raised by the previous discussant? This concerns the inverse welfare relationship between farmers and the middlemen. I simply wish to state that my observations are mainly drawn from a country where it does not take long to remedy the situation through political pressure and also partly through mobility from one occupation to another.

*Ungku Aziz*: Is it not possible for this matter to be considered in relation to the American experience in the farm and in business? I believe the American farmers receive considerable protection from the Government and various other organizations. Apart from this the cooperative movement has also played a role. It has, for example, helped to improve the lot of farmers in some parts of Canada and in Mexico.

*Professor Silcock*: Professor Plath would agree that in his discussion relatively little attention has been paid to the means of specialisation. Perhaps this is taken for granted in this part of the world. It seems to me that productivity per worker depends very much not only on the possibility of being able to specialise on crops, but also on being able to combine the various crops in such a way as to yield maximum output instead of having to combine in terms of what is needed for consumption in a relatively narrow area. Now this is possible only if you have well-organised markets and it seems to me that this underlies some of the points made by Mr. Nurzid about the desirability of looking at the organisation of the markets.

*Professor Plath*: I agree that there is a great opportunity for increased production per worker through specialisation and through diversification. And I certainly agree that you cannot reap the benefits from specialisation unless you improve the marketing system first. It may perhaps be better to improve the marketing system before we try to get very far with a large degree of specialisation.

# THE UNITED STATES AGRICULTURAL PRICE POLICY AND INTERNATIONAL TRADE

By D. Gale Johnson

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## I. UNITED STATES TRADE IN AGRICULTURAL PRODUCTS

With respect to international trade the United States is in a rather unique position of being a major exporter of both manufactured and agricultural products and a major importer of agricultural products and raw materials. It thus plays an important role in world trade in both industrial and agricultural products. Most industrial nations are basically exporters of manufactures and importers of raw material, but the United States, besides being a very important importer of raw material, is also a major exporter of many agricultural products. This fact means that our role in world trade affairs is a unique one; our behaviour in terms of our farm programs as well as our trade policies can and does have a significant influence on the world movement and prices of agricultural products.

The importance of the United States exports in world trade might be indicated by the following rather sketchy statistics. These are no doubt extreme cases but they do involve very important agricultural commodities. There are a number of commodities in which the United States exports account for over 75% of the total world exports. These are lard, tallow, cottonseed and cottonseed oil, soybeans and soybean oil products. In the case of three commodities, wheat, cotton and tobacco, the United States exports account for between 30 and 45% of the world total exports. Finally, we export about 10 to 15% of the total international trade in rice.

International trade is also very important from the standpoint of the American farmer. About one third of the total United States output is exported. As to individual commodities, about one third of the wheat, cotton and rice, and about one quarter of the soybeans, tobacco and rye that are produced in the country are exported. So that international trade in agricultural products is important for the United States whether measured as a share of the total international trade or measured relative to production in the country.

Since the major aspect of my discussion is to try to depict some of the difficulties that arise out of our domestic farm price policy in the international area, I should like to begin by describing just what that farm price policy is.

The United States has a wide variety of programs designed to improve the function of its agricultural economies. We have a big-scale research and extension service which goes back almost a century. In addition, we have a fairly extensive government credit program, programs relating to agriculture and land tenure, rural transportation, and, at the state level, improvement of farm roads as an aspect of improving the marketing of farm products, etc.

However, I am not going to deal with all these programs. I am going to concentrate on a relatively recent arrival on the scene with respect to our farm policy, namely the price support program and the measures that are directly related to farm prices.

## II. A SHORT HISTORY OF FARM PRICE PROGRAM

The farm price support program in the United States goes back approximately 25 or so years. The program of the type now in operation was actually started in 1933, at around the bottom of the Great Depression. At that time it was envisaged as an emergency program for national recovery and as a means of increasing the income of the American farmers which was then very low.

Given the nature of the American political system, our farm price support policies have taken a rather specific form. There is in the United States a fairly distinct differential of powers and authority between the executive and the legislature, and generally the latter is rather jealous of those powers which it feels are reserved to it by the Constitution. As a result most legislation in the United States is written with much greater detail and specificity than is the case of those systems modelled after the British or the French pattern.

In setting up the price support legislation, the American Congress considered it necessary to establish specific objects as to what price supports themselves should do. The objective was to define a parity price, which was an attempt to determine what was believed to be a fair price for the program. We know that it is extremely difficult to find a fair price in terms of what all would agree to be fair. Yet this was the task the Congress undertook, and the result was the definition of parity price as a purchasing power concept. The parity price for a commodity was therefore expressed as that price which would give the commodity at a given moment of time the same purchasing power, in terms of the things that farmers bought, as it commanded during the base period. The base period selected was the five years immediately preceding World War I. I should mention that this was the earliest period for which the necessary data for the calculation were available.

There was thus defined a parity price for each of a large number of commodities, and at one time as many as one hundred different commodities had each a parity price calculated and many had a parity price support program. The next question is, what was this price support program?

In the original legislation, although there had since been a formal and distinct change, it was believed that efforts to control output of agricultural products would be adequate to achieve increase in prices to approach the parity levels.

At about that time the average of farm prices was about 50% of parity, so that there was a considerable distance to go to reach parity, and the machinery that was put in the hands of the Secretary of Agriculture had had to be fairly intensive.

At first this consisted primarily of authority to try to induce the farmer to reduce the acreage of his land devoted to what are called basic crops such as wheat, cotton, rice, tobacco and a few other crops, as well as to limit livestock products. At the same time what later became an extremely important tool was introduced into the legislation. This was the creation of the Commodity Credit Corporation that had authority to make loans to farmers on their crops, and these loans are of a kind that is fairly unique in the world today. They are defined in the United States as non-recourse loans.

The non-recourse feature of these loans means simply that the Commodity Credit Corporation cannot collect the amount of money borrowed by a farmer, unless the farmer wishes to repay. The farmer in obtaining such a loan has two alternatives: (1) He may deliver the farm product which served as a security

for the loan, or (2) He may pay the amount borrowed. Thus, if the market price exceeds the loan value, the farmer will redeem the farm product used as a security for the loan by paying the Corporation the amount borrowed. But if the market price is below the loan value, he will deliver the product to the Corporation.

This program of granting non-recourse loans has been in operation now for more than 20 years for many of the farm commodities, and it represents part of the direct means, together with the government storage program, of assuring a given price, if sufficient storage space is available. Though other methods of direct price maintenance have been used, such as purchase operations, the loan and storage operations have been the mainstay of the farm price support program.

I would like at this stage to discuss briefly some of the problems that have arisen in our domestic price policy. As I said earlier, originally the intention was that farm prices could be increased primarily by our efforts to restrict output. This may sound as a strange kind of problem for people in this part of the world where the major task is that of increasing output. There was however at the time a feeling that special steps should be taken in this direction, and that at least under the emergency conditions that existed then it would be desirable to restrict output. Most agricultural economists would agree that the methods used by us to limit output have been relatively ineffective, for these methods have paradoxically been accompanied at the same time by positive incentives to increase production.

I would say there have been basically two major problems in connection with our price support program. First of all, not only were price supports maintained at relatively profitable levels and direct payments made to producers, but many of the activities associated with the farm programs have been effective means of increasing output by inducing or aiding farmers to adopt improved production techniques.

The second problem is one of stock accumulation. There have been at least two occasions when the stocks of price-supported commodities rose to burdensome levels. In both cases — 1942 and 1950 — wars intervened to rescue the farm price support programs.

The United States today accumulates stocks of approximately $7,000 million in its inventory. This is roughly equivalent to a third of a year's output of wheat or of corn, or a half of a year's output of cotton. These stocks are all owned or controlled by the Commodity Credit Corporation, and the cost of the program from the standpoint of the taxpayer has been rather sizeable particularly in the last few years. While the facts will not be known for some years to come, it is probable that the net costs of government programs for agriculture have ranged between a quarter and a third of the amount of farm operator income for the past three years.

## III. THE INCONSISTENT ELEMENTS BETWEEN THE PRICE SUPPORT PROGRAM AND A LIBERAL INTERNATIONAL TRADE PROGRAM

At about the same time as the start of our price support program in 1933, we initiated a program with respect to international trade that was designed to liberalize trade and to approach as near as we could to something of the free trade movement. This was the Reciprocal Trade Program which on the whole and with the exception of the real difficulties arising out of the price support program has been successful. This was the program towards significant reductions in the levels of tariff duties, and it resulted in the recent Reciprocal Trade Act.

What are the difficulties, or rather what are the elements of inconsistency between the program of freer foreign trade and the price support program? The basic source of conflict is not hard to determine. Many of the support prices are for products for which the United States is either an exporter or an importer. In either case, an effective price support in the American market soon presents serious and obvious problems. If the price support is for a product that is exported and that price support has any influence in increasing domestic prices, exports decline and domestic stocks rise. This loss of foreign markets may be of major importance to some sectors of the farm community and may, indeed, prevent the United States from taking full advantage of its real comparative cost advantages. If the price support is for an imported product, the domestic price support attracts increased imports, as illustrated a few years ago by the relatively large imports of oats from Canada, and may create significant strains on our relations with friendly governments if, as was done in the case of oats, measures are taken to prevent such imports.

In the first four or five years of the development of farm programs under the New Deal, the role given to price supports was secondary to other aspects of the programs. It was generally believed that the adjustment features of the programs — restrictions on acreages, transfer of land from one product to another, payments directly to farmers, and creation of orderly markets — were more important than the non-recourse loans. As a result, the first uses of restrictions on imports were not envisioned as an adjunct to price supports, but as a means of retaining to farmers any benefits that might accrue to them from making certain adjustments. The first restriction on imports was made in 1934 in connection with the sugar program, which did not include a price support or commodity loan provision. Several developments connected mainly with the price support programs led to import quotas being placed on some commodities, and later on to imports being prohibited for a specified list of products. Thus in 1951 powers were given that for a specified list of products, *no* imports were permitted if the Secretary of Agriculture determined that imports would (a) impair or reduce domestic production, or (b) interfere with the orderly domestic marketing or storing of the commodity, or (c) result in any unnecessary burden or expenditure under any government price support program. Imports of butter, non-fat dried milk solids, peanuts, peanut oil, flaxseed, linseed oil, and rice were prohibited and quantitative restrictions were placed on cheese.

In mid-1953, Congress let these powers lapse, but it did so only under the condition that the President, in an emergency, could impose import restrictions immediately; that is, without awaiting the recommendations of the Tariff Commission.

The relative arbitrariness of these actions serves to indicate the nature and significance of the schism between trade and agricultural policy. It is apparent that there is a strong tendency to hold the position that no interference is to be allowed with any action affecting domestic agricultural interests or programs. International trade is a necessary evil, but an evil that must be controlled and restricted whenever possible.

Import quotas have been applied in recent years primarily to cotton, wheat, oats, barley, rye, butter, dried-milk products, cheese, and peanuts. The controls on oats and barley were dropped in 1955. It should be noted that, in the absence of price support programs, the cotton and wheat quotas would be ineffective because the United States would be on a net export basis for these two crops. These quotas are, with little question, providing significant protection for the dairy industry.

Import fees have been imposed by the same authority on linseed oil, flaxseed, peanut oil, shelled almonds and filberts; of these, only the fees on linseed oil and flaxseed remain. These fees have had a significant effect upon the level of imports of these products. The commodities on whcih import fees are levied are the ones which we would import in some volume if no protection were afforded.

It is worthy of note that the value of all agricultural imports has declined in recent years. The peak level of agricultural imports was reached in 1951, when the value was $5,166 million. In 1957, the value of agricultural imports was $3,923 million. Most of the decline was in imports competitive with products produced in the United States. However, I do not want to imply that restrictive trade practices were responsible for all or even a major part of the decline. Much of the decline was the result of lower prices of agricultural products in the United States which had the two-fold effect of reducing the value of products actually imported and of reducing the incentive of exporting to the United States.

While the value of our imports of agricultural products was substantially less in both 1956 and 1957 than in 1951, the value of agricultural exports in 1956 and 1957 was slightly greater than in 1951. This brings us to the second aspect of the government programs in the field of international trade, namely export dumping and export subsidy.

Since 1921 the United States has had anti-dumping or countervailing duties as a means of counteracting the effect of export subsidies or dumping by foreign producers or nations. In spite of our own attitudes and legislative and executive actions on export subsidies and dumping by others, the Government actually in 1933 authorized export subsidies for certain agricultural products. It authorized the Secretary of Agriculture to use up to 30 per cent. of the gross customs receipts of the United States to expand domestic demand and to encourage the exportation of farm products. This provision obviously allowed export subsidies or export dumping.

Excluding war and postwar grants of agricultural products, large-scale subsidization of agricultural exports did not start until 1949 when, under the International Wheat Agreement, export subsidies were paid on wheat. Other legislative authorizations for various types of foreign surplus disposal permits a wide range of activities, generally inconsistent with the conduct of international trade by private enterprise. These include sale of products for foreign currencies not convertible into dollars at fixed exchange rates, donations, special arrangements for famine and other urgent relief, and direct barter.

As a consequence of the various measures and programs, over half of our agricultural exports in 1956 were directly handled and/or subsidized by the United States government. Our aggressive actions in expanding agricultural exports make it much more difficult for smaller and less wealthy economies to find profitable outlets for their agricultural products.

The basis of the complaint of other nations concerning our export subsidies on farm products can be stated as follows. American farmers receive prices substantially above world market prices for many agricultural products, especially wheat and cotton. These high prices encourage American farmers to increase production. While various efforts have been made to reduce production of farm products in the United States, these efforts have been of little consequence, as evidenced by the steady increase in farm production in recent years. Not only have support prices increased farm production in the United States, but these prices restrict consumption in the largest single market in the world. Consequently, the quantity of farm products that are available for export is increased in two ways: first, by increasing production and, second, by reducing U.S. domestic consumption.

To summarize, our present farm programs result in conflicts with a liberal trade program. This conflict results from the necessity to impose import quotas or other restrictions as a means of insulating domestic from world market prices and to use export subsidies as a means of disposing of surpluses accumulated when support prices are above the level that would equate demand and supply. Import quotas tend to restrict the dollars that foreign countries can earn by selling to the United States market, while export subsidies reduce the markets available to competing exporters.

## IV. APPRAISAL OF THE FARM PROGRAMS

Advocates of the use of import quotas and export subsidies are sincere in their belief that these programs are necessary for the economic health of American agriculture. Such a belief has as a basis one or two different propositions. Firstly, many segments of American agriculture cannot compete with imports from the rest of the world. Second, price supports as high or higher than those now in effect are necessary if American farmers are to have a satisfactory income.

It is obvious that if restrictions on imports of agricultural products were removed, the output of some farm products would decline. However, it must be remembered that a general liberalization of trade would result in increased agricultural exports from the United States.[1]

The first of the propositions is not a logically correct statement. It would be logically correct if it were stated as follows: "Many segments of American agriculture cannot produce farm products at the price at which these products are available in world markets and at the same time pay to land, labor, and capital the same return as is obtained in the production of other farm or non-farm products in our own economy." The producers of beet sugar in Colorado do not compete with the producers of sugar in Cuba, but instead must compete with the rest of United States agriculture and industry for the labor, land, and capital required for the production of sugar. It is incorrect to argue that the low absolute wages paid to sugar workers in Cuba give sugar producers in Cuba an advantage relative to the sugar producers in Colorado. If this position were correct, it would not be possible for the United States to export large quantities of lard to Cuba since the absolute returns to workers producing hogs in Cuba are low as well.

The second proposition, namely that price supports as high or higher than those now in effect are necessary if American farmers are to have a satisfactory income, deserves more extended comment.

I do not believe that American farmers have received any long-run income gains from the price support programs and the related subsidy payments that have been made since 1933.[2]

1. This statement assumes that we are starting from a relatively normal situation, namely one in which there are no export subsidies. I do not wish to imply that in a free trade situation agricultural exports would be at the same level as now prevails with our extensive (and expensive) export subsidy program.

2. For the fiscal years 1932 through 1955, the total net cost of programs primarily for stabilization of farm prices and incomes, programs primarily for conservation of resources, and government procurement of agricultural commodities for foreign aid programs was $19,760,000,000. Since that time, costs have probably been in excess of $10 billions. For estimates of costs for 1932-55, see F.D. Stocker, *Governmental Cost in Agriculture* (Agricultural Research Service, USDA, ARS 43-28, May, 1956), p. 25.

There are three main reasons why our past farm programs have not been effective in increasing the average incomes of American farm families:—

1. Contrary to original expectations, the farm programs have tended to increase farm output in the United States.

2. Unless entry into agriculture is controlled, which has not been done, there is no reason to expect that returns to mobile resources (labor and capital) would be increased by increasing the prices of farm products.

3. In some cases, the effects of the farm programs have been to increase production in other parts of the world.

Since 1929 there has been a significant increase in the output of farm products; 1956 farm output was 52 per cent greater than in 1929. During the same period, output per unit of input increased by about 40 per cent.[3] The increase in technical efficiency (the rise in the ratio of output to input) has meant that fewer resources, especially labor, have been required to produce any given volume of output.

There are several reasons for attributing at least part of the increase in technical efficiency (the rise in the ratio of output to input) to the farm programs. For one thing, where attempts were made to restrict the output of farm products by rationing land, farmers tried out methods of substituting other inputs for land and discovered that these methods of production were profitable even when the land input was not rationed. In addition, most of American agriculture was short on capital by the mid-thirties as a consequence of disinvestment during the first part of the decade. The rate of investment in agriculture was increased sharply in the late thirties, in part because of the large direct payments to farmers. Certain of the farm programs, particularly the soil conservation efforts, constituted a large-scale extension or education program, with a feature that other educational activities lacked — namely, money to give to farmers. Finally, price supports by reducing uncertainty undoubtedly acted to induce farmers to try out new methods of production and to expend more on current inputs requiring cash expenditures.

While a large part of the increased output of farm products has probably been the result of increased efficiency in production, it is also true that price supports at levels above what market prices would have otherwise been have induced farmers to increase their output or to fail to reduce output when supply was exceeding demand at the price support. This has surely been true in the cases of wheat and cotton.

I do not want to leave the impression that I would criticize our farm programs because they have resulted in greater technical efficiency in agriculture; in fact, the gains in technical efficiency have been of great significance to the American economy. But the increase in output per unit of input and the increases in output induced by higher prices have meant that farmers were prevented from realizing any long-run income gains from the programs. Given the competitive

3. The construction of the indexes of output and input are described in United States Department of Agriculture, *Farm Production Practices, Costs and Returns*, Statistical Bulletin No. 83, Washington, D.C., October, 1949, pp. 7 and 74. However, the estimate of inputs used in the text differs from that published in the above reference since the price weights used here in the quantity index of inputs were averages for 1946-48 and the labor input was based on estimates made by the Bureau of Census.

character of agriculture and the low price elasticity of demand, the end result has been, with the possible exception of tobacco, that farm products have been available to consumers at prices as low, if not lower, than what would have prevailed in the absence of the farm programs.[4]

Unless entry into agriculture is controlled, there is no reason to believe that returns to mobile resources would be increased by increasing the price of farm output. Any higher returns, in the short run, will induce greater employment in agriculture and, thus, tend to drive down returns to the old level. Agriculture is particularly vulnerable to this kind of adjustment because there is a "normal" or usual outflow of labor from agriculture to non-agriculture. Labor employment can increase quickly through the process of slowing down the outflow. In addition, given the price policies of firms supplying such inputs to agriculture as machinery and fuel, the supply functions of many current inputs and short term investment items are almost perfectly elastic, at least in the short run. These and other influences mean that any income gains will be realized by the most immobile resource, namely land. If price supports are effective in increasing the value of farm marketings through time, it means that new entrants into agriculture will be faced with higher land prices and their net return on a dollar invested would be no greater than if the price support program had not been in effect. Thus, most of the gains go to the owners of land during the early years of the price support program. It is true, of course, that persons who inherit farm land do gain in the sense that the value of the asset would be greater than would otherwise have been the case. But it is doubtful if it is an appropriate objective of national policy to increase the incomes of those who inherit their land.

I do not want to place too much emphasis upon the effect of American price supports upon the output of foreign areas. I believe that it has been of significance in increasing the output of tobacco in Africa and of cotton in Mexico and Africa. The wheat expansion that has occurred can probably be explained by the relatively high wheat prices throughout the world from 1945 through 1952. However, whatever expansion of output has occurred as a result of our price supports makes it more difficult to find profitable export outlets for our farm products.

American agriculture has a high degree of flexibility. It was this flexibility that permitted large increases in output during World War II. But it was this same flexibility that largely negated the efforts to restrict farm output in the late thirties, in the early forties, and again in recent years, and will probably defeat the same methods when tried in the future. There is, therefore, little likelihood that acreage limitation will be capable of reducing or even stabilizing stocks of farm commodities.

4. I am not saying that specific instances cannot be found in which the price paid by consumers for some farm product has been increased by supports and surplus disposal operations. What I am saying is that the effects of the farm programs over an extended period of time has been to increase farm output and thus to increase the total supply of food and fiber available to consumers. The effect of the greater output is to depress prices and price supports, which directly effect considerably less than have tended only to delay the downward adjustment of prices. Though I would have great difficulty proving the following statement, namely that if there had been no price supports for the past decade farm prices might now average between 90 and 100 per cent of parity rather than less than 85 per cent of parity, I believe that there is considerable basis for such a conclusion.

In the early part of 1954, I said, "Unless the United States embarks upon extensive export dumping devices, the present price support program may fall from its own weight."[5] It was obvious at that time that the price support program was in the process of accumulating vast quantities of cotton, wheat, corn and other farm products and that efforts to restrict our output by acreage controls would be of little avail. I believed that the continued accumulation of farm commodities would result in a general reappraisal of farm price supports, unless we engaged in extensive export dumping. While there is undoubtedly greater recognition now of the difficulties involved in relatively high-level price supports and increasing evidence of their ineffectiveness in increasing farm incomes, our farm program is still very much the same as it was several years ago. Rather than turning to more effective measures for a solution for our farm difficulties, we have engaged in export dumping on an unprecedented scale. There is more than a little merit in the argument of our foreign critics that what we have tried to do is to export our farm problem.

## V. THE UNITED STATES RICE PROGRAM AND RICE EXPORTS[6]

Up to this point, my discussion has been couched in general terms dealing with farm price programs as a whole and the problems these programs have created in the international sphere. I would like now to consider our program for rice, since this commodity is of great importance in Southeast Asia.

A brief historical note on rice production in the United States may be of interest at this point. At the turn of the present century, the United States was a small net importer of rice, importing roughly a third of domestic consumption. In the next two decades production increased four-fold, and for the four years following World War I, net rice exports averaged about 7,000,000 cwt. After the decline in prices during the twenties, rice production declined somewhat, though the U.S. was a net exporter of rice in every year of the interwar period save one (1936).

Between 1940 and 1948, the real price of rice increased substantially and the area devoted to rice doubled. Since yields remained constant during the forties, production also doubled. Since 1948, the acreage seeded to rice has declined by about 20 per cent, but yields have increased by almost 40 per cent so that output has continued to increase.

Until 1954 the government farm program had relatively little influence on rice prices and production. The first price support for rice was announced for 1941 as a part of the effort to increase food output in the United States for the war effort. But the average price received by farmers for the 1941 crop was $3.01 per cwt. compared to the price support of $2.04. The price support set at 90 per cent. of parity, resulted in some accumulations by the Commodity Credit Corporation in 1949, but the amounts involved were small.

It was not until the 1953 crop and, more importantly, the 1954 crop that price support operations resulted in large accumulated stocks. The 1954 crop was particularly large, due to an all-time high acreage seeded of 2.6 million. As

5. D. Gale Johnson, *Agricultural Price Policy and International Trade,* Essays in International Finance, No. 19, June, 1954 Princetown University).

6. The basic data of this section may be found in USDA, *The Rice Situation;* USDA, *Foreign Agricultural Circular,* (Rice, FR-2-58, March 20, 1958); *Rice Export Programs and Rice Acreage, 1958* (Hearings before the Subcommittee on Rice of the Committee on Agriculture, House of Representatives, 85th Congress, 2nd Session, March 20 and April 29, 1958); background information on the US. rice program may be found in M. R. Benedict and O. C. Steve, *The Agricultural Commodity Programs* (The Twentieth Century Fund, 1956), pp. 138-144.

has been the case of other crops, large-scale accumulations by the Commodity Credit Corporation resulted in extensive efforts to increase exports. Exports had reached a peak of 25 million cwt. in 1952-53, and 23 million in 1953-54.[7] By 1954-55, exports declined to 14.3 million cwt. and CCC stocks rose to in-excess of 17 million cwt. by the middle of 1954. By mid-1955, CCC stocks increased to almost 22 million cwt. and large-scale disposal operations were underway. In 1955-56, total exports were 19 million cwt., of which only 55 per cent. represented regular commercial sales. In 1956-57, exports increased to 27 million cwt., of which only a little more than a quarter represented commercial exports. In 1957-58, estimated exports were 20 million cwt., with commercial exports representing something in excess of a quarter of the total.

In the two years 1956 and 1957, the bulk of the subsidized exports went to four Asiatic countries — Pakistan, Indonesia, India, and Korea. Most of the exports to areas outside of Asia moved as regular commercial exports. In the three years 1955-1957, the total shipments under the public law for aid have totalled about 24 million cwt. of milled rice. Other governmental programs have resulted in exports of about 6 million cwt.

While it is probably true that some of the U.S. rice exports made under the aid law served humanitarian interests and did not interfere significantly with the markets of other exporters, it is also true that some of the exports were competitive with other major producers. How much international rice prices were reduced I cannot say, but the availability of U.S. rice in 1956, on favorable terms, was probably a significant factor in rice prices in 1956 and the early part of 1957.

I believe that the United States is making significant progress towards a more satisfactory situation with respect to rice. The price support for rice was 90 per cent. of parity in 1954. It was reduced to 86 per cent. in 1955, to 82.5 per cent. in 1956 and 1957, and to 75 per cent. for the current year. By the use of acreage allotments and other devices, as well as the reduction in price, the acreage seeded to rice has declined from 2.6 million acres in 1954 to 1.5 million in 1958.

At this time it is uncertain whether these adjustments are adequate to permit the U.S. to export sufficient rice on a commercial basis to prevent further accumulations of rice. Rice stocks in the United States are still large and may be about 17 million cwt. at the beginning of the 1958 crop year. On the basis of the 1958 acreage, U.S. production of rice may amount to about 45 million cwt. and domestic use may average about 27 million. Thus, U.S. exports would have to average about 18 million cwt. of rice to prevent further stock accumulations.

As I wrote at the end of July, the U.S. Congress was considering modifications in legislation affecting rice. A proposal which is supported by the administration and one of the major farm organizations is to establish the support rice at 90 per cent. of the average market price of the previous three years for 1961 and subsequent years. However, as a result of compromises, the minimum support level for 1961 and 1962 would be $4.00. This latter figure may be compared with the $4.33 support price for 1958 and $4.72 for 1957.

The very considerable expansion of rice production in the United States between 1940 and the recent past was the consequence of the rise in the real price of rice and not the U.S. price support program. However, the existence of price supports in 1953 and since prevented certain adjustments in production that would otherwise have occurred. It seems clear that with the recent advance in

7. During the two years 1953 and 1952, a total of 5.2 million cwt. of milled rice was provided for the Republic of Korea. All references to quantitites of rice are in terms of rough rice unless there is a contrary indication.

rice production technology in the United States even in the absence of price supports and export subsidies the U.S. would be an important exporter of rice. It would certainly not export as much as in 1955-56 or 1956-57, but it will undoubtedly continue to be a much more important factor in the world rice trade than in the years before World War I. However, I hope that it will maintain its position as a major exporter on a fair and competitive basis without the aid of subsidies from the government.

## DISCUSSION ON PROFESSOR JOHNSON'S PAPER

*Mr. C. Mahendran*: I would like to add a little to what Professor Johnson has said about rice exports being partly responsible for the low market prices in 1956 and 1957.

I wonder if many of us are aware of the fact that the United States is the foremost non-Asian exporter of rice to the Asian market. The United States originates about 16% of the world exports which is about 7 times the pre-War volume. Changes in United States exports therefore must be expected to affect world prices, but the extent of this influence is not quite as great as this proportion would seem to indicate.

In a large measure the U.S. exports to Asia reflect relief shipments. It is true that in the absence of U.S. rice, some of the countries which have benefited by the U.S. shipments would have bought at competitive prices in the world market, but it is doubtful whether they would have purchased quite the same quantities that they received in American rice. Indeed one is tempted to agree that the measures for surplus disposals have led to imports of American rice a considerable amount of which would otherwise have been foregone because of the lack of foreign exchange. U.S. rice exports have not only eased the food situation and increased consumption in Asian countries, but they probably also have helped to release capital expenditure which would otherwise have been spent on consumption.

Against this is the argument that the lowering of prices in so far as they have affected U.S. rice exports have reduced revenue to the Asian rice-exporting countries and that these countries anxious to participate in the openings for increased import demand have been hampered to some extent by the surplus disposal programmes.

This contention no doubt has some validity. On the other hand, the fact that rice prices and therefore the cost of living have been lower in the rice-importing countries, has the advantage that can be weighted against any adverse effect that any dampening of the rice prices might have had on exporting countries. In this context another salient point to note is that the lowering of prices by the United States rice exports has not been so much a reduction from reasonably stable levels but rather a tendency to curb the inflationary movement of prices. In the early part of the Indian Second Five-year Plan, for instance, substantial quantities of U.S. surplus rice were imported into India to stabilise the rising prices of food.

The conclusion therefore appears to be that the overall effect of U.S. rice disposal in the Asian markets in the past has been more beneficial than a small reduction of prices to the largely rice revenue depending countries of Asian might suggest at first hand.

As for the future, if the U.S. Government still persists in its tendency to offer with restraint rice from Government stocks for surplus disposal so as not to unduly disrupt the world market, and if the trend of the last few years in lowering the price of exports and to reduce the acreage planted continues, then the rice-importing countries of Asia should not have many misgivings about the effect on their economies of U.S. rice disposals.

As for the other countries, most of them, by virtue of their apparent political indecisions, can count on United States commodity exports to relieve them in times of inflational crisis. But of course if the entire Far East becomes communist, then it would be to the full advantage of the Asian rice-exporting countries because the U.S. would then ban the export of rice to the Far East as a strategic raw material.

In any case, given the price support and the acreage allotment, the amount of American rice that the Asian countries can expect annually in the form of U.S. exports is determined to a considerable degree by the world rice market prices engendered largely as it is by the Asian countries themselves, which account for about 70% of the world rice export and 80% of world rice imports. For so long as the world price reflected at the farm level in the U.S. is above the U.S. support price, and so long as the U.S. supply exceeds the quantity which could be sold in the (U.S.) domestic market at a farm price equivalent to the reflected world price, the export market is a major determinant of the average annual output in the U.S. (cf. G. L. Mehren and Nicholas Thuroczy, *The Market for U.S. Rice: Foreign,* University of California Giannini Foundation of Agricultural Economics, Mimeographed Report No. 163, 1954, p. 42.)

## QUESTIONS AND ANSWERS ON PROFESSOR JOHNSON'S PAPER

*Mr. Koh Watt Seng*: We have just heard about subsidised exports of rice and I would like to refer to the subsidised challenge of Professor Plath and Professor Oppenfeld and the other experts in Southeast Asia to help to increase productivity of agriculture in the countries around here. In the absence of any increase of effective demand, such an increase in productivity is going to bring down prices. And with subsidised exports of rice coming into the world market, it appears to me that the trend of rice prices will be further depressed.

This question of subsidised exports of rice and subsidised technical assistance appears to involve a paradox. I should be grateful if Professor Johnson will explain.

*Professor Johnson*: I do believe that in most countries of Asia — and I include here not only those major exporting countries but some of the major importing countries like India and Pakistan — technical assistance has in fact played an important role. I believe that basically the levels of income in these countries are such that the assistance will be effective.

Another aspect of this is that we know that in many of the lower income Asian countries, the income elasticity of demand for rice is very high. There are some who believe that this is greater than unity. I do not know whether this is true in general, but I can say that it is at least unity in India.

I think that the basic economic forces to bring about a rise in demand are there.

*Professor Silcock*: I wonder if Professor Johnson would comment on the subsidised export of wheat and the effect of that on the rice market for the rice-exporting countries. I think that there might be effects in Japan and Pakistan. I do not know whether there are other effects and whether in the long run you will expect these to have a significant influence in the rice market.

*Professor Johnson*: The two cases you mentioned, Pakistan and Japan, are important, though India may be somewhat in the same position too. It has had relatively large imports of wheat.

In the case of Japan it seems to me that there was a fairly significant change in their consumption pattern of cereals mainly after World War II They shifted their diet quite substantially to wheat, but more recently they appear to be shifting back to rice.

I suppose there always is a potential possibility in the Asian countries to shift towards wheat, but the changes in taste or the changes in the consumption pattern with wheat as a main staple would have to be fairly radical to lead in this direction.

However there are rice producers who are wary of subsidised exports of wheat into some of the Asian countries, particularly as a long-run proposition.

*Dr. Lim Tay Boh*: It appears from your paper that you think that the American price support programme, which is a form of protection, has resulted in increasing production as well as productivity in agriculture in the country. If we tie that with the problem of increasing agricultural productivity in Asia and also with the current thinking here of making use of protective measures to stimulate or to promote agricultural and industrial development, would the use of these protective measures in Asia result in increasing agricultural productivity, and if so, will this result in a definite improvement to the farmers and to the economy as a whole?

*Professor Johnson*: I would not, at least on the basis of my personal knowledge, recommend that for a considerable number of the Asian countries an attempt should be made to use price support as a protective measure for their agriculture.

The United States can use such a scheme because their agricultural population is very small — about 5% of the total population. But in a country in which 60, 70 or even 80% of its workers are engaged in agriculture, it seems to me that the use of price support as a means of raising the level of prices of these commodities and therefore perhaps of increasing production is going to lead to nothing but inflation. The sense in which I made this comment that Asian countries might consider price support was purely as a kind of stabilising device, so that if a given area or part of a country has a very large crop output because of weather conditions say, the additional fall in prices would not be too drastic in that area.

Secondly, if the appraisal which I have heard here and in other parts of Asia about the function of the marketing system is correct, I think that an active price stabilisation scheme by governments might go a long way to increase the degree of competition in the marketing process and would result in the reduction of risks as well as a reduction in the cost that is involved in the marketing of agricultural products.

It is for these reasons that consideration might be given to some kind of price support measures. But these are very difficult to carry out, if the experience in the United States and some other Western European countries is taken into account. I do feel that you might get a significant improvement in the marketing structure by such a policy and therefore consideration might be given to it, but not as a means of protecting the agricultural sector.

*Mr. C. Mahendran*: May I add some comments to the same point? As far as price support measures for countries in Southeast Asia are concerned, the basic problem is that we do not have the necessary funds because the agricultural sector of the economy is at least two-thirds of the whole economy. A price support

policy for agriculture would therefore require a substantial amount of funds. The fact that we do not have the funds as well as the technical personnel to keep up the organisation prohibits the idea of a price support policy in Asian countries.

I would like to ask Professor Johnson a differen question. You stated in your paper that one of the reasons why price support programme has been so effective is that it has actually increased production in other parts of the world. Can you please explain this statement?

*Professor Johnson*: I would like to mention that this statement is true mainly in respect of two commodities, tobacco and cotton.

The American price support program has set the world price on tobacco by restricting output or acreage in the United States against the rise in demand, and as a whole this price was set at a profitable level. As an example of my statement, Southern Rhodesia which started tobacco farming in the early forties is now one of the world's major exporters of tobacco.

In the case of cotton, we also set during the period 1940-56 the cotton price throughout the world. In Brazil and Mexico and in parts of Africa, there has been an increase in their output of cotton. Their outputs are now higher than in the absence of our price support program.

# MARKET STRUCTURE AND PROCEDURES IN ECONOMIC DEVELOPMENT

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## THE MEANING OF PROGRAM OR POLICY

Any program or policy formulated by any agency should have — must have — three major components.

### THE TARGETS

The first and perhaps most difficult component in developing policy is the determination of what is wanted. Until there be unequivocal specification of objectives of policy, there is no means whatever through which the efficiency of actions designed to implement the policy may be measured. The definition of targets or objectives requisite to efficient policy is not simple.

Effectively to develop a set of objectives which can guide policy action, the targets must be described in *operational* terms. An operational definition so specifies the objectives that automatically the operations necessary to reach the objectives are defined. The necessity of such definition is clear. Unless those responsible for policy have a known objective, it is unlikely that they will obtain any desired end except by accident. Failure to specify precisely and operationally the objectives of governmental programs has frequently been a major cause of difficulty in operating them. Optimally, the objectives of any policy should be specified in purely quantitative form. Thus, fundamentally, any policy really involves a set of objectives designed to change the magnitude of one or more variables from their present levels to magnitudes which are more desirable. This is the really operational aspect of target or objective formulation.

Secondly, the objectives of any type of program are usually multiple in nature. Since there is nearly always a set of objectives, it becomes necessary to assure that the targets or objectives are mutually consistent. Nearly always, there is a series of short-run targets paralleled by another series of longer-run targets. The targets are mutually consistent if they can be gotten simultaneously. To determine whether it is possible to attain all such targets simultaneously, something must be known about the degree and nature of their interdependence. Very often, the possibility of attaining any one of the targets will limit the degree to which others may be attained. In fact, in some policy formulations, the attainment of one or more of the specified objectives would completely preclude the attainment of others. Since implicitly or otherwise most target formulations are multiple in nature, the second step after the operational definition is to determine the logical internal consistency of the system of objectives.

Then, again in almost any type of policy or program, targets must be sought within certain stringent constraints or limitations. Frequently, these limitations or constraints are beyond the power of those who specify the objectives of the policy to change. Such limitations may be physical, legal, or institutional. Thus, a system of policy objectives so complex as the California water plan is obviously bound by a variety of limitations or constraints which

are implicit or explicit in the targets or objectives. Always, there is some form of economic constraint. Budgets which may be allocated to policies are not unlimited. Accordingly, the comparison of likely receipts against likely costs always involves a limitation. Targets may also be constrained or limited in their specification by value norms, or a sense of what is right or wrong. It is always wise in specifying the objectives of any program also to indicate the limits placed upon the objectives themselves.

### WHAT MUST YOU KNOW

The description of the targets or objectives outlines what it is one wants in starting a policy or program. In addition, one must decide what data or analysis are necessary in order to determine how to go about getting the objectives. As a generalization, one may say that no policy or program is efficient unless there be a straightforward and simple system of analysis upon which the administrative recommendations are based. If, as indicated above, the real meaning of a target can be expressed in terms of changing the magnitude of one or more variables from current levels to levels which are more desirable, then in order to set up a system to do this, at least three major questions must be answered. The answering of these questions constitutes the same kind of research procedure or analysis common in any scientific field.

The first of the three major questions at issue in the analytical component of a policy is to identify the factors which are causally related to the target variables. Thus, if a target variable or objective be expressed in terms of price per unit, no administrative mechanism desired to change the level of the price from current magnitudes to more desired magnitudes is possible unless one is able to state that the price at issue varies systematically with changes in specific other variables. When the related or causally determining variables are identified, one can then know that a change in such variables leads to a change in the target or objective variables. It may then be concluded that the only means to shift the target variable is to create changes in the magnitudes of one or more of the factors which are causally related to it.

This, however, is not adequate. In addition to knowing that the target variable is causally related to other factors, the nature or the degree of such interrelationship must also be discovered. This is equivalent to saying that a change of a given amount in one or more of the determinant or causally related variables will lead to a specific change of a certain amount in the target variable. Thus, it might be desirable to know that the price — assuming it to be a target variable — is related to volume of sales. It is further necessary to know that a change of a certain percentage in the volume of sales, with no change in other price-determining factors, will lead to a specific percentage change in the target variable, price. Without this information, effort to manipulate the causally related variables as a means of achieving the targets is blind and irrational.

Finally, it is necessary to know the system within which the target variables and the causally related variables are interrelated. This is a complex notion, but if there is to be effective administration designed to achieve the targets, the system of covariation must be discovered.

This is, indeed, no more and no less than the usual process of research in which one structures the question; sets up a hypothesis; tests it; decides to reject or not to reject his hypothesis; and then uses the results as a basis for administration. The process will indicate the various possibilities for changes in causally related variables as a means of achieving desired changes in the targets. This process then shows the optimum magnitudes which should be imposed upon the causally related variables as a means of achieving the optimum magnitude of the target variables. Once this is done, the objectives of policy are achieved.

### WHAT YOU MUST DO.

In addition to knowing the optimum adjustments, it is necessary to assure that these optimum sizes of determining variables be achieved. This means that some administrative mechanism is necessary. The objective of such an administrative machine is actually to assure that the causally related variables be set at those magnitudes or sizes which are optimal in terms of achieving the desired magnitude of the target variable. This is a substantially different procedure from the analytical processes outlined above, the purpose of which was to specify the variables which might be controlled in order to achieve the target and the values which should be assigned to them in order to obtain the optimal value in terms of the target. Probably with respect to actual operation of program or policy, the development of the appropriate administrative mechanism to assure achievement of the target is the most difficult part of policy formulation and operation.

## THE PATTERN OF CHANGE

In every nation of the world, the food and agricultural industries are changing in all their major attributes. There seem to be many reasons for this process of change. In different countires, the methods by which chagne is being achieved differ widely. However, there appears to be an almost universal acceptance of the major objectives behind revolutionary alterations in these industries.

### THE PRESSURE FOR DEVELOPMENT

Again, in all countries policies and programs for "economic development" are among the major activities of government and business alike. In the greater number of nations, the drive for economic development reflects dissatisfaction with poor food and poor housing. There is no passion for poverty. In most cases, the specific objectives of the development programs are not clearly defined. However most economic development programs in most nations appear to be designed to achieve an increase in output, a change in the components of economic outputs, a higher *per capita* income, and a different distribution both of wealth and income among people. Implicitly or explicitly, the objectives are sought through government intervention. It seems to be generally assumed that the desired objectives of the programs can be achieved substantially faster through government than by the private autonomous activity of individuals and firms.

In all of the programs, including those of the United States, the food and agricultural industries are of strategic importance. Large proportions of the total productive labor force of most countries are engaged in agriculture. Very large percentages of available disposable income are required to feed the populations. Development of a commercial and prosperous agricultural industry is a major element in efforts to create a stable and large-scale domestic market for non-agricultural products. The food and agricultural trades are also highly important components in the trade balances of many countries. Similarly, these industries are of utmost importance in terms of accumulation and allocation of capital instruments. The nutrition and general living conditions of the people in agriculture determine their own productivity as well as the productivity of the population engaged in other industries. Just as in the United States, the food and agricultural industries are of a particular importance politically.

There are great difficulties in projecting into the future the rates of progress of general economic development. Equally stringent difficulties limit the accuracy of forecasting the rate of development of the food and agricultural industries. Long-run demands for food and agricultural products depend primarily upon population and income. Over relatively short periods, population can be forecasted with some precision. There is an almost exact one-to-one relationship between percentage increase in population and percentage demand for foods at given real

prices. Income and its distribution, on the other hand, depend in a large part upon rates of increase in productivity. Again, these rates may be projected with some precision for short periods, but long-run projections become extremely difficult. Similar limitations affect long-run projections of the capacity of nations to produce given amounts of foodstuffs. However, most conservative estimates indicate the prospect of a massive increase in the size of food industries throughout the world. In the United States, equally conservative estimates indicate capacity to meet the oncoming pressure of food demand. This capacity may not be so clearly obvious in other nations.

To a greater extent than in the United States, the prospects for economic development in general depend upon the development achieved in the food and agricultural industries. This, taken with the widespread poverty in many areas, explains the attention given to the changing pattern of the food and agricultural industries in most of the so-called "underdeveloped" nations.

## NATURE AND DIMENSIONS OF CHANGE

Despite the diversity of economies, there are certain clearly defined uniformities in the changing structures of the various food industries of the world. First, and perhaps most important, the old "traditional" method of production is slowly disappearing. In the traditional system, farm production was fixed with respect to the crops produced, the methods and scale of operation, the tenure system, processing, and distribution primarily by that which had been done in the past. There was no direct orientation of farm production to market demands. As a matter of fact, in many such countries there still appears to be a gross unawareness on the part of farmers of the mere existence of alternatives to traditional pattern and methods of crop production. The farm units are fundamentally noncommercial in nature. In some of the nations of the Far East, analysts consider that much hunger could be alleviated quite quickly through a simple understanding on the part of farm producers that there are, indeed, alternatives to present methods of production. The increase in output might be heightened if producers were made aware that different net returns or incomes might be associated with the various alternatives for production. Added to this, a few immediate adjustments in production techniques — weeding, as an example — might add as much as 10 or 15 per cent. to the food supplies of the traditional nations. Over the long pull, many people believe that output could be significantly increased by feasible change in size of units, methods of operation, and structure of the enterprise.

## THE "OPEN" MARKET

Invariably, the old traditional method of food production seems to be associated with an equally ancient system of processing and distributing the products of the farms. Processing — where it exists — and distribution are small in scale and fragmented. In their own way, they are more like the old guild units than a modern business enterprise. Crops are produced in such countries without any real reference to the market. The distributing units thereupon take such crops and adjust them through some sort of grading or sorting as best possible. Sale is then made to small-scale distributors who, again, are able to do some of the sorting and allocation of food products — the production of which was never commercially oriented. With such a system of distribution, there is no technical necessity for uniformity of product, for stability of supply, or for adjustment of volume to the needs of the various parts of the food system as a whole. The distributors have no merchandising policies. Similarly, there are

no merchandising necessities confronting farm producers and dictating uniformity of quality, stability of supply, and adjustment of delivery terms to the needs of the distributors. Finally, the old open market system depends upon consumers who have no facilities and no demands for the type of buying which has developed in the United States in recent decades.

The old "open" market system has long existed in parts of the United States. Where the food industry is so organized, there is no direct communication of their respective needs among producers, processors, distributors, or collateral agencies. Traditional production at the farm level is oriented to the conditions of soil or climate much in the way that parts of the wheat industry in the United States are so oriented. The products — like some of our grains and fibers — are produced largely because the physical resources are available to produce them and, secondly, because they have always been produced in those places by those methods in the hope that, at some price or other, the open market system would find a home for whatever the volume and constituency of output turned out to be in each season. The businesses involved are fundamentally noncommercial enterprises with no real understanding of business decisions and no real facilities for choosing effectively among alternative patterns of production as a means of enhancing farm income. Most important, price quotations from widely separated markets alone served as the major means to guide the allocation of crops once they were produced.

. . Again, the traditional type of farm production is usually associated even today with a system of regional markets designed to concentrate the heterogeneous output of small producers. Then, a series of marketing agencies break down the regional concentrations of traditional product for sale to individual consumers, often on a basis of peddling or huckstering.

Nonetheless, even the most primitive food economies have functional levels or segments much like our own. Many of the farms merely produce their crops without reference in the production process to the marketing system which will follow or the use to which their products will be put. In many commodity lines, there is little if any processing. The marketing system, as noted above, could be described as a process of local assembly, regional or terminal concentration, jobbing, and final breakdown of the product into extremely small lots to be sold direct to consumers at the retail level. Again, even in the most primitive nations, a series of collateral industries like transportation or money lending are associated with the primary functional levels.

But in these primitive economies, there are no procedures whereby decisions at the producing level can be adjusted to the needs or the wishes of firms at other functional levels except through the somewhat ineffective procedure of open price quotations. Yet, in the primitive economies as well as in others, the physical operations of processors and distributors and their merchandising procedures as well are sharply affected by the actions taken at the producer level. The "open" market — of which many vestiges still remain in the American economy — is called "open" primarily because there is no jointness of decision-making among independent firms at the producing, processing, or distributing levels.

The price for crudely classified categories of each product is made atomistically. This means that the total impact of the demands of many small distributors serving many small consumers upon the total supply determined by the independent activities of many small producers results in a price quotation. This is the main, and often the single, instrument of communication among firms in the distributing, processing, and producing levels. Thus, price is mainly important in determining the way in which a crop once produced is allocated among

alternative patterns of use. It can have little effect upon production patterns or output at the farm level. There are some businessmen who will say that these same attributes of open market operation and traditional production exist in parts of the United States.

### THE SYMPTOMS OF CHANGE

Despite the diversity of detail, two primary aspects of change are appearing in the agricultural industries of other nations. First, either through government or by the development of private trade, the earliest signs of deviation from the purely traditional and noncommercial farm production are appearing. Some market orientation at the farm producing level is beginning to show. Consequently, there is a slow development of the awareness of the existence of alternatives which might face the farm producer. He is beginning to learn, in some countries, that it is possible to use his production facilities in ways different from those which are traditionally impressed upon him. As the farmer learns the possibilities of alternative decisions and the different results which may come from them, there is a consequent pressure on the collateral industries to facilitate the transition of the producing units from the traditional to the commercial level. Governments, therefore, undertake policies designed to assist this transition or at least to impede such ancient collateral institutions as the moneylender from delaying the change.

Quite naturally, the first bare signs of a new type of distribution system are appearing along with the changes at the producer level. In some nations, processing industries are developing. In many of them, the development of commercial classes of people distributnig foods on a commercial basis is well advanced. There is a growing awareness that some types of processing and distribution are utterly impossible without particular types of farm production because of the technical and merchandising requirements of the distributive trades.

Consequently, there seems to be growing some knowledge that the effects of decisions made at the farm level limit or facilitate the decisions which might potentially be made by firms emphasizing processing and distributing functions. The obverse of this proposition is equally valid. Consequently, even in the least developed nations, efforts are benig made to induce or to require adjustments by farmers so that people in the processing and distributing trades may enhance the efficiency of their operation free of the dead weight of the traditional production system. Again, there are analysts who believe that essentially the same types of developments are appearing in some parts of the American food industry.

## THE LESSONS

Two generalizations seem common in nearly every nation. First, while the traditional system of farm operation is breaking down, the food and agricultural industries seem nearly always to be the last major sectors of the economies to become truly commercial in their nature. The first necessity for a real change in the food and agricultural industries seems to be an awareness of the possibilities of alternative decisions and a further awareness of the differing effects of different decisions with respect to production patterns. Then, it appears equally necessary that the farm producers be motivated to choose among the alternative production patterns in terms of the likelihood of relative income from each of them. In some nations, particularly the collectivist ones, inducement has been associated with requirement. Only after such awareness and motivation can effective steps be taken to adjust production patterns to a commercial basis offering reasonable likelihood of yielding somewhere near the maximum possible returns to producers. In countries where such awareness appears to be emerging, there is a slow elimination of some of the major attributes of the old open market distributing industries which seem inevitably to have been associated with traditional production.

Secondly, and more important, in all food and agricultural economies — regardless of their primitive status — some sort of an equilibrium of the total system seems to exist at any given time. The different functional parts or segments fit together in the sense that one could not operate effectively or even at all in the absence of the other. Thus, given the traditional patterns of agricultural production, the attributes of the processing and distributing trades seem to be necessary and inevitable. Probably, taking the total food system from production through to consumption as a whole, the organization of the different functional levels of distribution, processing, and farm production are the most efficient which can be developed.

Given this equilibrium interrelationship among firms in different functional segments, it can then be concluded that change in one part of the system cannot effectively be made without related and simultaneous change in all the others. The policy implications of this relationship to development of the food industries and thus to general economic development is clear. Always, efforts to reform land, to change production practices, or drastically to alter distributive methods without correlative changes at other segments have failed. It is equally clear that, if a change occurs in one of the major segments either by the action of private business people or through government, ultimately there will be changes in other parts. Thus, should a substantial change occur in production, old enterprises, markets, channels, and methods of processing and distribution almost automatically become maladjusted. Perhaps products fail to fit into the new system. The competitive status of some regions of production may alter. In any economy, whether it be advanced or otherwise, successful change in one part of the food industry will almost always lead to the withering away and the elimination of old methods and old enterprises in other parts.

## SUMMARY

Formulation and execution of development policy — like all other policies — require operational definition of targets, testing for mutual consistency, and specification of constraints. Then it is necessary to analyze the targets. This is a research process. It means that factors related to variation in the targets must be identified, their interrelations measured, and their system of variation defined.

The goals of development policies seem generally to involve greater and different outputs. Usually, manipulation of output-determinants involves government intervention to accelerate attainment of the targets. The food industries are always the crucial ones in such programs.

Traditional production seems slowly to be diminishing. Awareness of alternatives and development of commercial farming will almost surely change the open market system inevitably associated with traditional farming.

Few development programs seem really to conform to the basic requirements for economic policy. Market structure in all countries is in a sort of balance with all other segments of the food industries. Thus, changes in *any* segment — marketing or others — induced by government are unlikely to be successful unless consistent changes are made in *all* segments. And changes in any one segment will almost always lead ultimately to changes in other functional levels. This is a major reason that faulty or inadequate economic research can lead to abject failure of economic policy.

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